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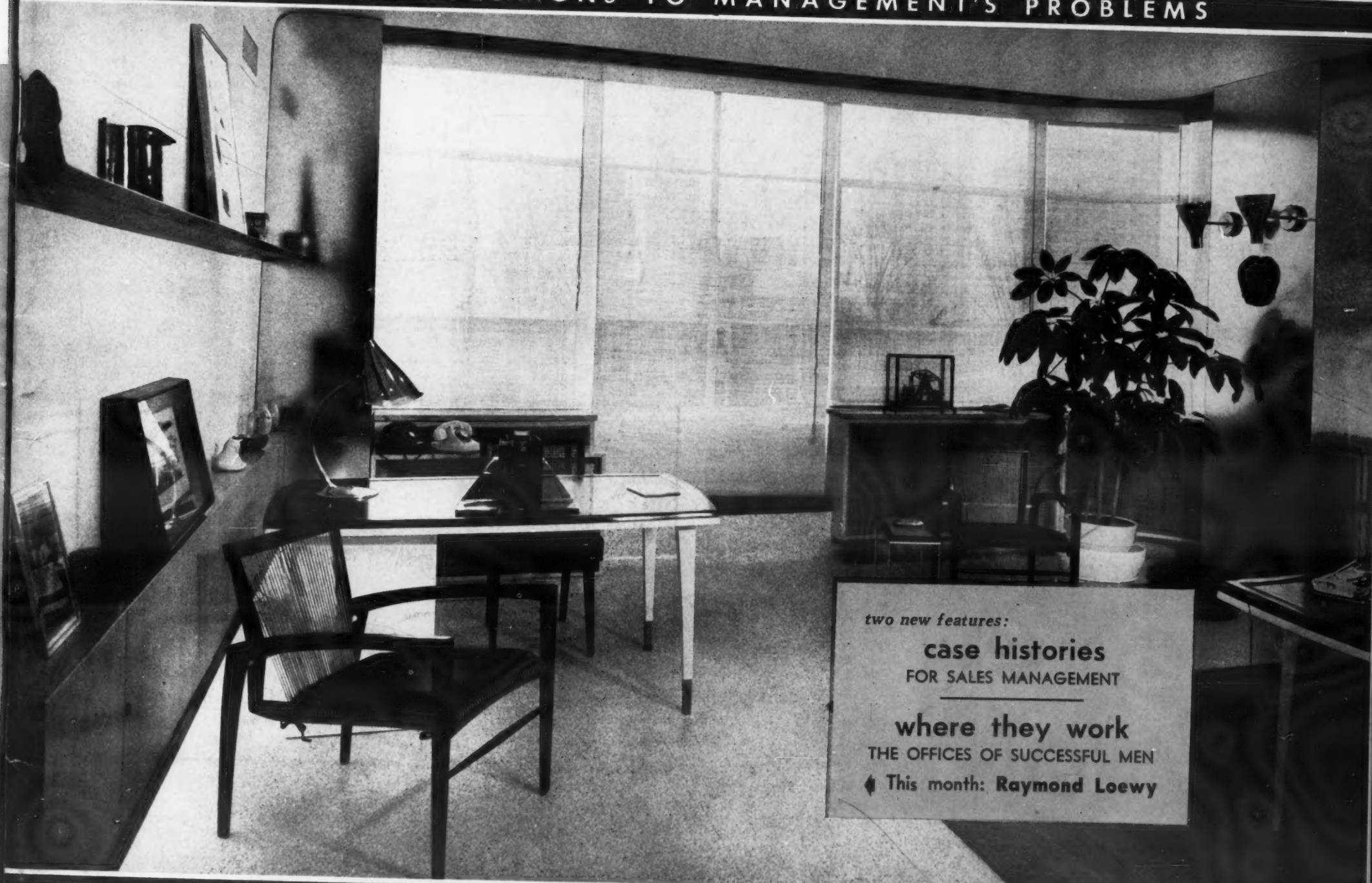
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Management

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FOR SALES MANAGEMENT

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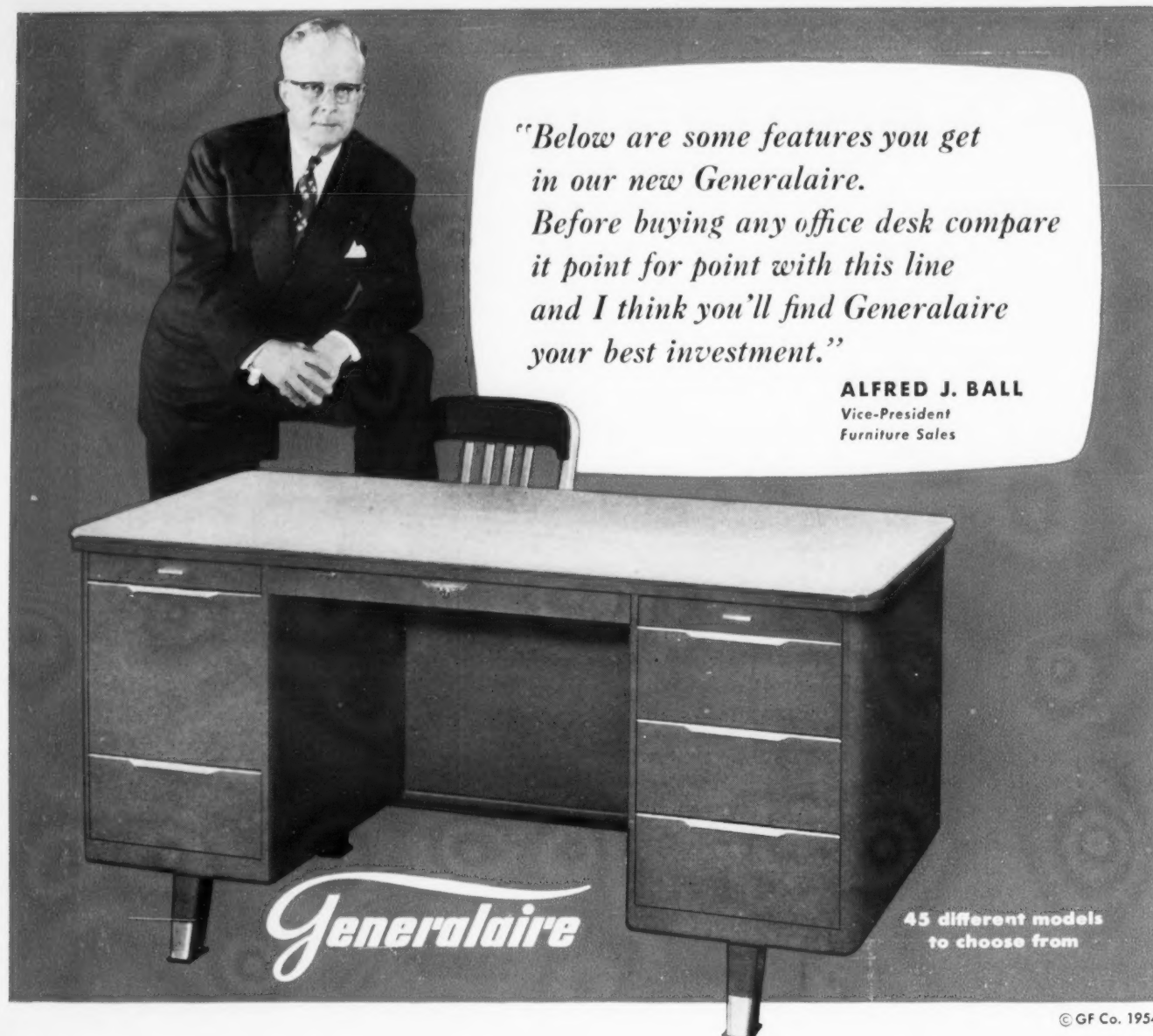
◀ This month: **Raymond Loewy**

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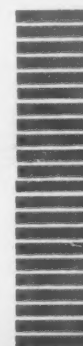
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Much of our editorial material comes from business and management specialists as well as from active businessmen at all levels of management.

Most articles employ case histories. An article may be based on a single case history or can be built around a group of related case histories. We like to mention the name of the user company involved in each case history and, when possible, to quote an officer of the company.

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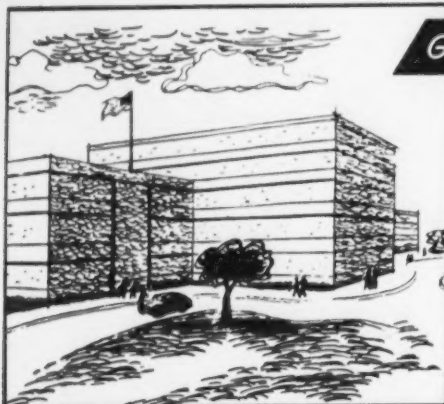
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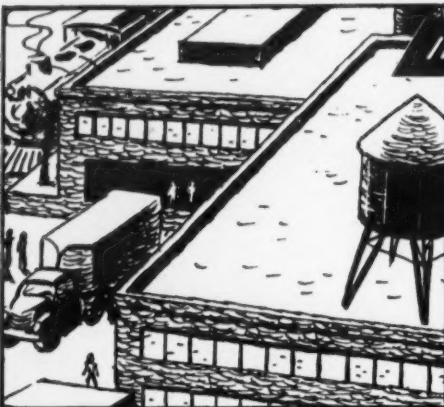
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case histories

FOR SALES MANAGEMENT



by Charles S. Roberts
Charles Roberts Associates

Mr. Roberts is a management consultant who has specialized in marketing research and sales management problems since 1945.

What is a profitable account?

How a company can effectively apply selective selling techniques

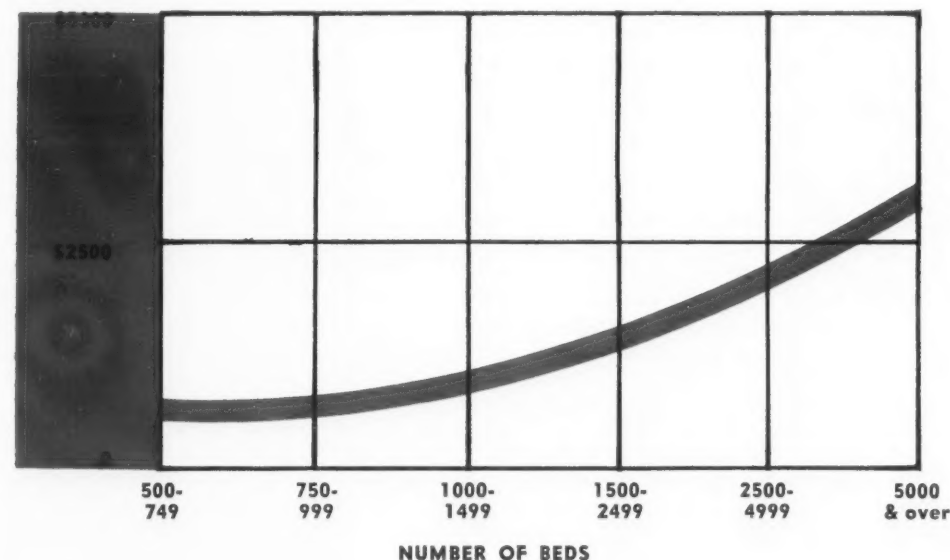
Selective selling can help management achieve a number of desirable objectives. The salesman can make more fruitful calls per day, which means more dollars of sales with no increase in size of staff. The small order problem that bedevils many companies can be substantially eliminated. Profitable accounts, which the salesmen may have been overlooking, are frequently "brought to light." Salesmen are guided as to how frequently they should schedule a call for each cus-

tommer. Selective selling can serve as a basis for appraising the performance of salesmen, establishing territorial potentials, realigning territories, and providing for the growth of the sales force on a sound basis.

The value of this approach is well illustrated by the experience of an office supply and equipment company which sold duplicating equipment and supplies. This company had 26 salesmen and sold its products directly to practically every type of organization

Hospitals' Estimated Annual Potential Volume for XYZ Product

Estimated Average
Annual Purchases



methods

that required duplicating facilities — hospitals, banks, commercial and industrial organizations, department stores, local and federal governments, etc. Equipment sales were relatively unimportant. The principal income producer for the company was the sale of supplies. Government sales accounted for more than one-third the total volume. With the anticipated decline in government requirements, the company wanted to develop a plan for an improved sales realization from non-government users.

An appraisal of the sales operation revealed the common situation of salesmen trying to cover extended territories. They depended upon their personal experience and judgment as to what companies were their best prospects. No objective criteria were available to guide salesmen in using their time most advantageously. They had no way of knowing which type or size of account would yield the best return. Every territory had far more prospects, from the point of view of sheer physical numbers, than any *one* salesman could possibly cover. Therefore, they had to be selective in choosing accounts. The extent to which salesmen can be effective without proper guidance is reflected, to some extent, in the tremendous variation which was found in the ratio of *sales* to *potential* for different men. Although the average sales realization was 11% of potential, the range was from 2.7% to 21%.

There is nothing unique about the problems of the company being used here as an illustration. Every company, selling on a direct basis, is faced with the problem of equating the *costs* of having a salesman call on an account to the *volume of sales* which can be realized from that account and the attendant opportunity for earning a profit. For example, if the maximum annual purchases of a customer amount to \$300, and the gross manufacturing profit is \$60 (or 20%), this profit may be more than offset by the cost of making five sales calls during the year to get that business.

The probabilities that an organization was a suitable prospect for the company's duplicating process declined as the size of the organization became smaller, adding a further complication.

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Unless this were realized, a salesman could spend a substantial amount of time cultivating organizations who were truly not good prospects. It was found that the local governments of only 11 counties with populations of less than 25,000 were using this duplicating process and were not good prospects. By instructing salesmen not to try to sell those with populations less than 25,000, the county government prospect list was reduced from 3,050 to 1,090. By eliminating 1,960 counties from the prospect list, salesmen were in a position to utilize their time to better advantage.

Pursuing this approach to selective selling, size criteria were set up for 18 major categories of potential customers. For manufacturing companies, the criterion was number of employees; for life insurance companies, it was total assets; for hospitals, it was number of beds, and so on. Within each customer category, further work established a relationship between *size of company* and *potential volume* which could be used as a guide by the salesman as to how many calls could be justified. All of this work, laborious though it may be, has paid off. Using the size criteria, it was possible to develop a list of 7,000 companies, by name and location, which formed the basis for selective selling. The desired results were achieved: the company was able to determine territorial potentials, realign sales territories, establish measures of performance, and institute other desirable management tools for the direction and control of the sales operation.

In seven years, the company's sales have increased threefold, its earnings are consistent, and, from a company whose stock was largely in local hands, the firm is now rated by a leading investment house as a "growth stock"—as a result of selective selling. m/m

"worth

Over-age but active: According to the Metropolitan Life Insurance Company's statisticians, of all men at ages 65 to 69, fully three-fifths are gainfully employed. At ages 70 to 74, the proportion is about two-fifths. Even among those at 75 and older, one in five is still working.

repeating

methods

\$\$\$ tax tips \$\$\$\$

How the new tax law affects

Pensions, profit-sharing, stock options

by Hilary L. Seal,

Partner, Morss & Seal, New York
From a talk before the American Management Association.

Let us briefly review how the new tax law affects a company's plans—actual or prospective—for providing retirement pay for its employees. Top executives can now be taken care of more readily by means of employee stock options. The law has been considerably extended and clarified with respect to such benefits. Other executives and employees who have acquired the virtue of thrift can benefit by deferment of what would otherwise be a cash bonus. Although this is not "new law" it is only recently that a practical method has been found which attains this objective.

For the rank and file, the company has available a conventional pension plan or profit-sharing trust. The new law has made very few changes here and still leaves the distinction between these two types of plans somewhat arbitrary. Under the 1950 Revenue Act, a new incentive could be offered executives whose increased activity might deeply affect the firm's future. This was the restricted stock option.

The underlying idea is that management can be given a stake in the company through an option to purchase stock at a later date at what may prove to be a price much below its market value. Most, if not all, of the appreciation in value of the stock between the date of the option and the date of the eventual sale would be taxed to the employee at capital gains tax rates. However, in order to receive this special tax treatment, the grant of the stock option has to be subject to certain restrictions:

1. If capital gains rates are to apply

on sale of the stock, the option price must not be less than 95% of its fair market value at the time the Board of Directors votes on it.

2. The stock must not be disposed of (a) within two years of the grant of the option or (b) within six months of its purchase.

3. The option must be non-transferable except by inheritance.

4. The employee must not own more than 10% of the employer's voting stock at the time the option is granted.

5. The option must be exercised during employment or within three months of its termination.

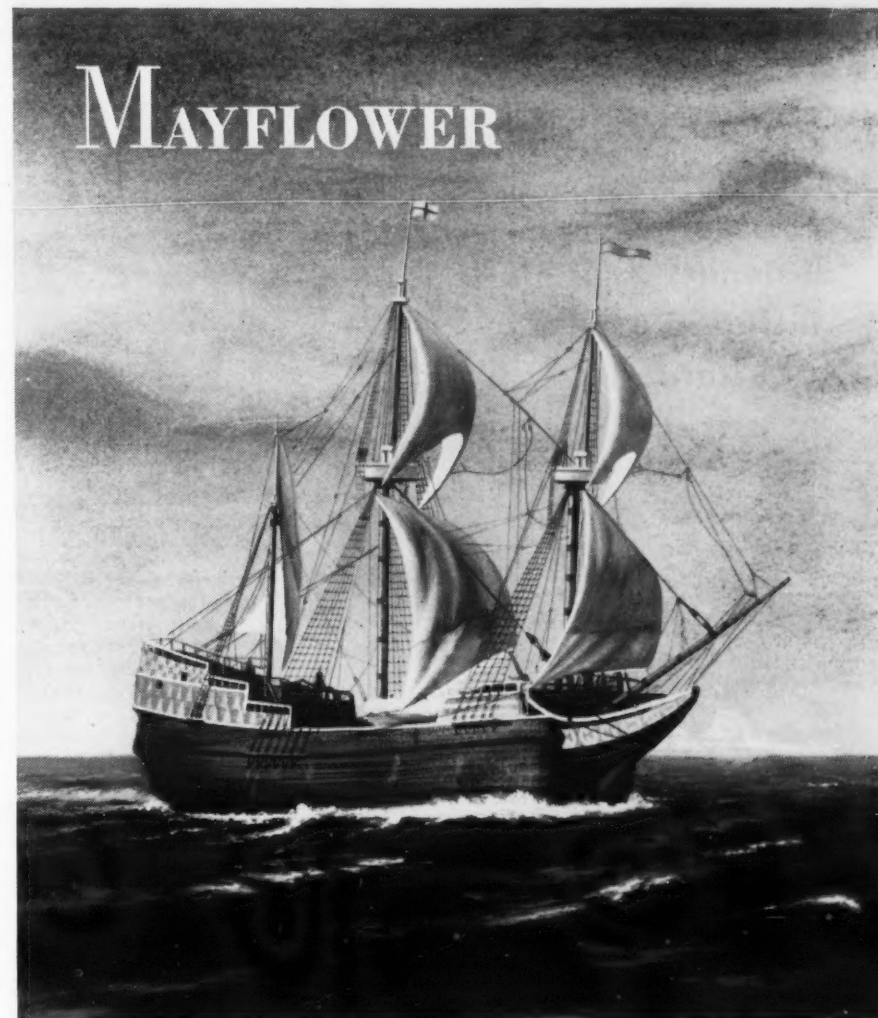
6. If the option price is 85% or more (but less than 95%) of the fair market value of the stock at the time the option is granted, ordinary tax rates will apply on the 15% differential at the time of disposal of the stock (unless the market value is lower at the time of disposal than it was at the time of the grant).

Section 421 of the new tax act does much to broaden and clarify the old law relating to stock options. In brief, the new features are:

a. Options granted after June 18, 1954, must be exercised within 10 years from the grant thereof.

b. The 10% stock ownership limitation will not apply if the option price is 110% or more of the market price at the time the option is granted, and if the option must be exercised within five years from the date of the grant or within one year from the date of the Act.

c. The estate or beneficiary of a



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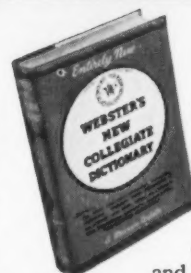
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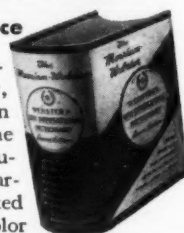
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deceased employee may exercise his stock option but, if the estate does so and then transfers the stock to a beneficiary, this is treated as a "disposition" for tax purposes. When the estate or beneficiary has increased income as a result of disposition of the stock, the estate tax previously charged on the value of the option is allowed as a deduction for income tax purposes.

d. The option price may be set at 85% or more of the fair market value of the stock at the time the option is exercised, and the tax, at ordinary rates, on 85%-95% options will then be limited to that derived from the 5%-15% price differential at the time the option was granted.

(The balance of his actual income from the purchase and sale would, of course, be at capital gains rates.)

e. Employees with stock options are allowed to continue them in the case of corporate mergers, consolidations, reorganizations, or liquidations. In general the requirement is that the value of, and the benefits under, the option must not be increased by the organizational change.

f. If an option is modified in favor of the employee, the basis of the option is to be the higher of the market values of the stock at the times of the original and the modified grants, unless the latter price is (and has been for a year or more) at least 20% lower than it was at the time of the original grant.

g. Sometimes a restricted stock option becomes disqualified because the employee sells the stock "too soon." In this case, the tax adjustments for employer and employee are made in the year in which the stock is sold.

h. Restricted stock options may pass between joint tenants without incurring tax liability.

Note that "c" protects the employee's estate in case of his death whereas "b" will apply to stockholder-executives of closely-held corporations that must be financed in their early years through outside capital. These modifications in the old law—which is otherwise unchanged—will do much to make the restricted stock option more popular. It certainly offers a company

a relatively inexpensive method of attracting and retaining the best senior executive personnel.

The stock option gives the top executive a real incentive to develop the company he works for. However, he runs the risk of seeing his option prove worthless, through no fault of his own, because of a general decrease in market values at the time he retires. For this reason many companies promise the executive a pension as part of his employment contract. It is sometimes stipulated that, for example, half this pension will be paid to his widow whether he dies in service or after retirement. These pension payments would all be tax deductible to the company at the time they are made. Furthermore, the employee would not accrue a tax liability during his employment unless he is given "vested rights" in a reserve or annuity contract the company is establishing to meet the eventual pension liability. However, Section 2039 of the new Act would include the value of the widow's pension in the employee's estate. This would *not* occur if this widow's pension were part of a qualified pension plan.

Converting a cash bonus plan

What about the broader group of employees, above the rank and file, whose ability to save is severely restricted by today's high tax rates? Profit-sharing trusts with stock options become very practical if the company has in existence (as many have) a cash bonus plan which may originally have been established to meet the increasing cost of living in the war and immediate post-war years.

The cash bonus plan is transformed into a profit-sharing trust without any change in the method of determining the total sum for distribution each year (as long as it comes out of profits or profit-accumulations), or in the rules hitherto used for allocating this total among the employees—provided, however, that there has been some rule of allocation other than the whims of the directors. Each year, *before* the amount of the "bonus" is known, every employee would be required to make an election to participate in the profit-

methods

(Circle 514 for more information)

sharing trust or not. If he elected to participate, his account in the trust fund would be credited with his share in the profits. When he eventually retired, terminated his employment, or died, his accumulated interest in the fund would be distributed to him. On the other hand, if he elected *not* to participate, his share would be paid to him immediately in cash.

This procedure ensures that the employee who defers the receipt of his "bonus" will *not* be taxed until he actually receives cash after his retirement or on severance—in which cases a lump-sum withdrawal would be taxed at capital gains rates. However, the terms of the bonus plan must be capable of being redrawn to comply with the rules of qualification prescribed for profit-sharing trusts.

It may be assumed that many of the employees will continue to take their "bonuses" in cash. However, employees other than executives may appreciate this excellent way of accumulating their "bonuses" at tax-free interest. In fact, it would be an essential feature of such a plan that a fair proportion of the lower-paid employees took advantage of the thrift feature. Otherwise the Treasury might claim that the plan was discriminatory, not in its provisions but in the actual operation of it.

The new tax code makes no changes in the requirements for qualification of pension plans and profit-sharing trusts. In brief, such plans:

- a. Must be for the exclusive benefit of employees and their beneficiaries.
- b. Must benefit all employees within a classification that the Commissioner finds does not discriminate in favor of officers, stockholders, or supervisory or highly-paid personnel.
- c. Within this employee classification, must not discriminate in favor of the employee groups mentioned.
- d. Must not use their accumulated funds for any purpose except to pay benefits to employees and their beneficiaries.

If a plan is qualified the employer may deduct contributions thereto as a business expense. In the case of a profit-sharing plan his limit of deduction is 15% of the payroll of covered

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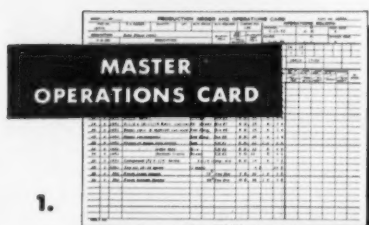
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Unlimited Re-entry of Production Orders Without Transcribing Detailed Specifications...



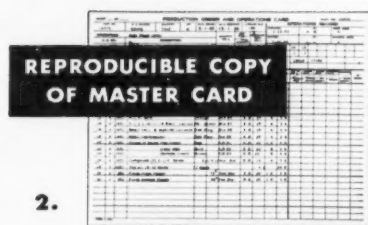
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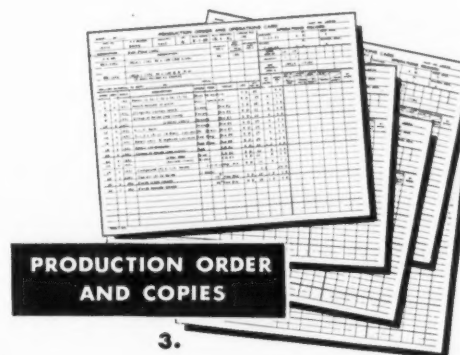
1.

Translucent Master Operations Card is prepared by process engineer. A reproducible film copy is made in a Copyflex Machine and sent to Production Control. Original Master Card is retained for close control of process or engineering changes. Master Card bears all specifications necessary to manufacture particular part or assembly.



2.

Reproducible copy is converted to a production order by addition of order number, quantity required, and necessary dates. This variable information can be erased from the film and new variable information recorded whenever desired. That means unlimited re-entry of production orders without retranscribing detailed specifications.



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inates 90% of the clerical work otherwise required. Paperwork is mechanized for fast, tight and efficient control.

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employees and rules are prescribed for the tax treatment of carry-overs of unused allowances and of excess contributions. If a company has a pension and profit-sharing plan covering the same employees, the 15% limit is raised to 25% of payroll of such doubly-covered employees.

An entirely different rule is used when a pension plan (or plans) exists on its own. The maximum deduction in any one year is determined by actuarial calculations, and any contribution in excess of this maximum is carried forward for deduction in later years. However, unused allowances are not carried over to increase later maximums.

New law revisions

The following are the main changes that have been made by the new law:

1. The capital-gains treatment of lump-sum distributions from pension and profit-sharing trusts, on account of separation from service, is extended to distributions from qualified insured plans, and to distributions occurring on the death of an employee *after* separation from service.

2. If a member of a group of corporations with a common profit-sharing plan has a loss year, the other members of the group can make a contribution on its behalf.

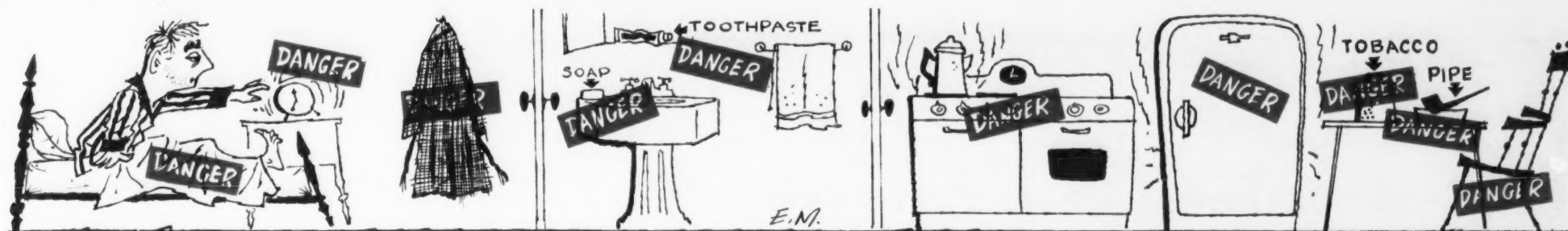
3. The 60-day period after the close of the tax year, during which contributions may be made to an employee plan, is extended to the date for filing the company's tax return, including any extensions that may be obtained.

4. Companies that have contributed to certain pre-1954 welfare plans with pension features will in the future be allowed to deduct these pension contributions as a business expense.

5. If a trust engages in a prohibited transaction after March 1, 1954—such as making a loan to the employer-creator without adequate security—it loses its exempt status.

6. Employee trusts become subject to the tax on unrelated business income, but special provisions apply to business leases. m/m

methods



It can happen with any product

How to protect your company with product liability insurance

by John L. Barter, Vice President
Hartford Accident and Indemnity Company

A small, but successful, machine shop, that had built a solid reputation for quality and dependability, learned by bitter experience that something can go wrong with even the best and most carefully-made product. The firm contracted to supply a specifically-designed hook to a manufacturer of scaffoldings. Not long after the hooks were delivered, some of the scaffoldings collapsed on a job where they were in use. Several workmen were seriously injured.

Investigation disclosed there was no responsibility on the part of the scaffolding manufacturer, since the latter's specifications called for parts which would be adequate from a safety standpoint. However, a metallurgical examination of the hooks showed clearly that they had been treated and formed at a degree of temperature which obviously would make them brittle, contrary to contract specifications.

Eventually, they were found negligent in supplying a defective part. The company had to pay substantial damages arising from the injuries caused by the scaffolding hooks. This case is but one of a great many which could be cited to point up the possibility of liability claims resulting from bodily

injury or property damage caused in whole or in part by a product *after it is delivered and placed in use.*

To protect the business community against this particular loss exposure, the Casualty Insurance Industry makes Product Liability Insurance available. This form of coverage, to employ the language of the policy, protects the insured against claims stemming from "the handling or use of, or the existence of, any condition in goods or products manufactured, sold, handled, or distributed by the insured, if the accident occurs after the insured has relinquished possession thereto to others and away from the premises owned, rented, or controlled by the insured."

Every product is a risk

Just a relatively few years ago, Product Liability Insurance held interest chiefly for manufacturers and distributors of food products, drugs, and other articles intended for human consumption. Today, every manufacturer or distributor has good reason to be concerned about product liability claims.

Experience of casualty insurance companies shows that injury or damage can be caused—and has been—by the use of virtually every type of product in existence. *Every product* should be viewed as a potential source of product liability claims. The word "product" can signify anything produced or obtained by some operation or work. Farm crops and minerals are products, as are trees in a forest. When a tree is felled, sawed into lumber, allowed to

season, then is reduced to boards, and finally processed into the materials from which furniture is made, each piece becomes a separate product. That includes the dust from the saw and the unused portions cast aside as debris.

Potential "booby traps"

The average person daily comes into contact with any number of products that could cause him bodily harm or damage to his property. To illustrate, let's follow the activities of someone we'll call "Jones" as he gets ready to go to work in the morning.

First, he's awakened by an alarm clock. Its case might have a rough edge or, if electric, its wiring might be defective. He could suffer an injury in his eagerness to turn it off. Our friend arises from his bed which, if not sturdily built, might collapse. Or a needle or sharp instrument might be imbedded in the mattress which inspectors at the manufacturing plant failed to discover. Before making his trip to the bathroom, he puts on his slippers and mechanically reaches for his robe. The robe might be dyed with a substance to which his skin is sensitive. The soap he uses might contain a caustic of sufficient strength to cause a rash. Even his toothpaste might contain a harmful ingredient.

The stove on which his breakfast is prepared might explode. His chair might give way under his weight. His food might be contaminated by a leak in his refrigerator or contain a foreign substance not detected by the processor.

When he lights up his pipe after breakfast, the tobacco might contain a noxious substance or the pipe itself might prove injurious by virtue of the material used in its manufacture.

Please keep in mind that Jones is a fictitious character. The important point to remember is that every one of these things can occur—and has. Accidents, with resulting claims, have arisen out of every article mentioned. The list of possibilities could be increased a hundredfold and still would cover only a small percentage of the kinds of product liability claims that are presented during one year.

Other types of claims

The various products which might have been injurious are items that the general public uses regularly. Claim-producing accidents, however, happen with many other products which have a more limited application. Consider, for example, the case of an employee who was operating a heavy press machine in an industrial factory. Failure of the machine caused the loss of the man's hand. A metallurgist examined the machine and found that the mishap was caused by a casting "so weak and rotten as to be unfit for any engineering use."

Suit was brought against the manufacturer of the machine which, in turn, interpleaded (as a party defendant) the foundry that had supplied the casting. The loss fell entirely upon the foundry. Damages were quite substantial, since the operator lost forever his ability to

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These men are practical operating executives. They aren't interested in theoretical or academic discussions. They *are* interested in obtaining factual, documental information that can be put to *immediate* use when the 3-day session is over. Emphasis will be on case-history reporting of systems, procedures, and administrative techniques already in use and proved in practice.

Since it will be impossible, in a 3-day session, for all of these men to meet and compare notes, they are going to be split up in 25 man groups, and each group will attend one of 13 concurrent seminars on different subjects (see list). Each seminar will last one day, so a man can attend only three in all.

That means a man may miss seminars of extreme interest to him and his company. It has been decided,

therefore, to transcribe *word for word* the entire proceedings of every seminar, including the talks at the general meetings that run concurrently with the seminars.

Available in book form

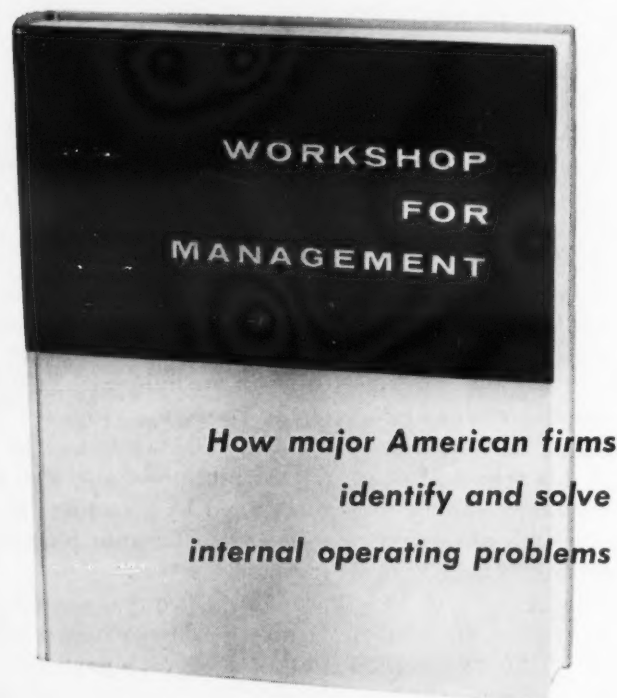
A straight transcription could be mighty difficult to read and use. For that reason the editorial staff of MANAGEMENT METHODS Magazine has been retained by the Systems and Procedures Association, sponsors of the meeting, to edit and completely index the transcriptions. They will also publish the finished manuscript as a *hard-bound book* of approximately 500 pages. It will be a large book (8½" x 11"), set in book type, with pertinent charts, forms, and other illustrations.

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List of subjects covered in seminars

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3. Utilization of Present Electronic Equipment
4. Records Management
5. Work Measurement
6. Quality Control in the Office
7. Forms Design and Control
8. Practical Work Simplification
9. Systems and Procedures Functions
10. Communications
11. Office Layout and Design
12. Operations Research
13. Inventory Mechanization

work at the trade in which he was trained and had long experience. And the foundry had to pay the loss out of its own resources, since it did not carry Product Liability Insurance.

In another case involving product liability, a workman was repairing an engine in an industrial plant. While he was removing a battery from the engine, the vent cap of one of the cells flew off and struck the man in the eye, causing serious injury. Later, it was found that a defect in the battery had been responsible for the accident. Still another example is provided by the experience of a homeowner who was using a power lawnmower to cut his grass. The pointed tip of the cutter blade flew off and imbedded itself in his left foot, causing multiple fractures and severe lacerations.

Any number of cases could be presented to illustrate the substantial dollars-and-cents liability that can result from a small and seemingly inconsequential part such as a nut or bolt. It is a fact that none of the stages in the manufacture and utilization of a part of this type can be accomplished unless, throughout the transformation from raw material to finished part, there is casualty insurance to safeguard the invested capital.

Risks are greater today

Today's insurance buyer is confronted with many problems created by the fast-changing economic conditions of recent years. He must allow for the revolutionary changes that have occurred in social thinking, a trend to higher damage awards, the good but expensive developments in the field of medicine, and all the other elements at work in our modern social order that have produced new concepts to swell and complicate the problem of costs, which are inflated by economic forces beyond our control.

The unhappy experience of a fairly large industrial company indicates the impact of these various problems and developments on the product liability field. For over four decades, this firm had not been faced with a single product liability claim. Then came the end of World War II and along with it a marked upswing in the inflationary spiral. Within two years, the company

had made settlements or lost verdicts totaling almost \$2 million as a result of product liability claims. The significant point is that *the company had not changed its way of doing business, but the social and economic climate in which it was operating had undergone a very great change.*

Today, the threat of sizable losses resulting from product liability claims cannot be ignored by anyone responsible for seeing to it that the financial well-being of a business enterprise is protected by insurance. More specifically, this threat calls for Product Liability Insurance in amounts that can be expected to provide a really adequate safeguard in the light of present-day conditions. m/m

"worth

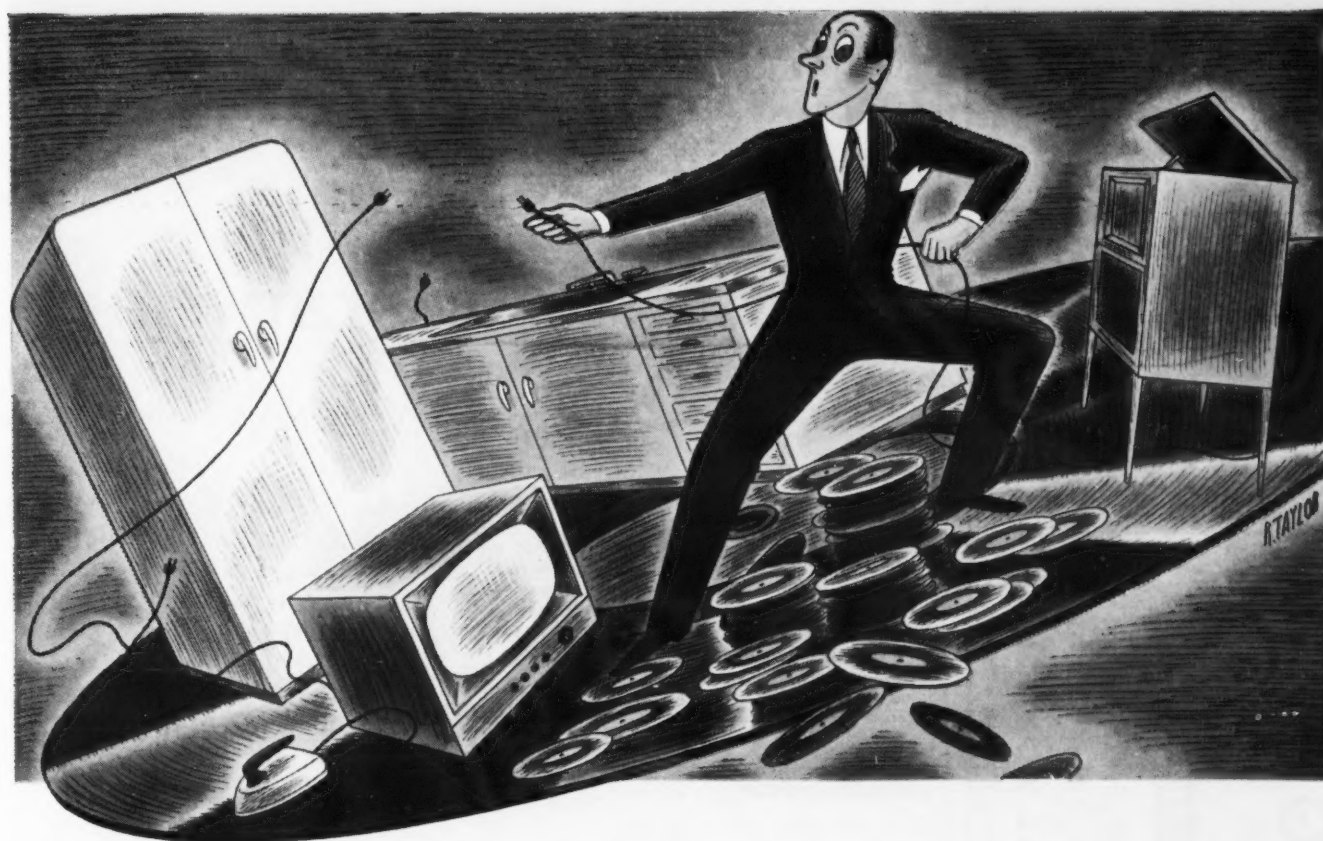
Noise, safety and space: Office noise can be reduced if desks are pulled away from walls and partitions, according to the Wood Office Furniture Institute. They advise, however, that filing cabinets and safes should be located against walls and near pillars to reduce the strain on structural beams. In locating desks and furniture in an office, 60" of space should be provided for a main aisle, 44" for an intermediary aisle, and 36" for a secondary aisle. These widths are designed to provide the maximum mobility with the minimum amount of wasted space.

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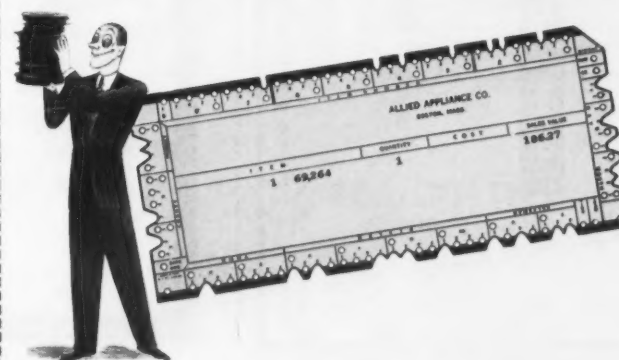
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diagnostics FOR MANAGEMENT

by Leslie M. Slote, Ass't. to the Pres., Ketay Mfg. Corp.
Management and Labor Relations Consultant

An approach to the Guaranteed annual wage

Here's how one company has provided its workers with 52 paychecks a year

Editor's Note: The President of the Nunn-Bush Shoe Company wrote to us recently regarding our coverage of the guaranteed annual wage in the July "diagnostics." He pointed out that the Nunn-Bush plan, which is in operation at their Milwaukee plant, is not a guaranteed wage plan, but rather a joint effort on the part of the company and the workers to stabilize annual earnings. This article presents the salient features of the Nunn-Bush plan which offers a practical, although unorthodox, solution to many types of incentive wage problems facing management today.

During the depression days in the early thirties, the Nunn-Bush Shoe Company tried to find a pay plan that would give their employees the security of a steady annual income paid on a weekly basis, regardless of how much the factory worked.

An analysis of the percentage relationship of the company's wages to sales, over the years 1926 through 1934, showed that an average of 19.46% of the dollar value of sales had been paid out annually as wages. Moreover, although the analysis covered a violent period of fluctuation in sales and wage rates, from boom time to depression days, the annual extremes over the nine years only varied between 21.17% and 18.18% of sales.

Up to 1935, they had always paid hourly rates. After completion of their epoch-making study, in July of 1935 they instituted the "share-the-production-plan," commonly known as the

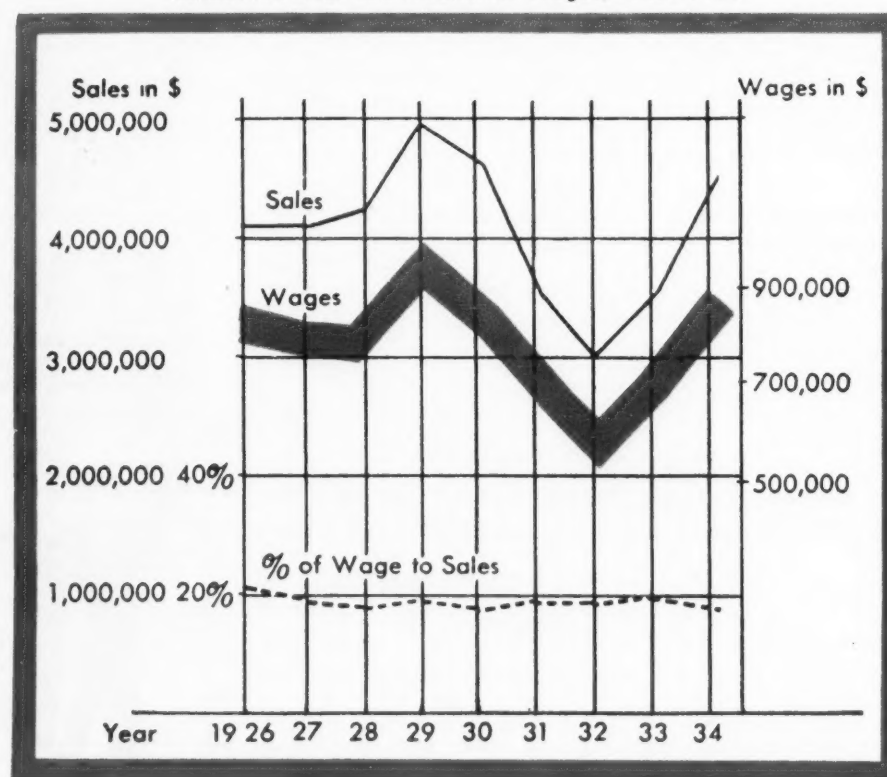
"Fifty-Two-Pay-Check Plan." Nunn-Bush believes that a worker's wealth is his annual income, and not the rate at which he earns it. Further, this annual income depends upon the volume of production. Accordingly, employees, as a group, were paid 20% of the dollar value of all production, in order that workers might receive a check each week regardless of business conditions and available hours of work in the factory. Naturally, the plan experienced changes in its evolution. In 1948, by agreement between the company and its workers, it was modified so that instead of figuring wages as 20% of sales, it would be taken as 36% of the value added to raw material costs. This was done because it was felt that exclusion of raw material costs offered a more accurate and fairer method of computation.

How the plan works

In its broad essence, and omitting many of its details, the plan operates as follows: workers of more than two years' service are eligible to share production, and are called "associates." They represent about 70% of the normal work force. Workers having less than two years' service, or those unable to meet minimum production standards, work for an hourly wage and are called "employees." Each associate is given a yearly "differential rate" based upon the skill required for his job, the long-term volume of his production, and the quality of his work. The differential rate is not intended to be a yearly salary or wage rate, but reflects the relative value or contribution of each worker to production.

At the end of each month, 36% of

Relation of Sales and Production Wages, 1926 - 1934



methods

the value of all production, less the cost of raw materials, is set aside as group earnings and is paid into the Group Fund. Since it is impossible to estimate in advance the share of the Group Fund which will have been earned by each associate, drawing accounts are established, with 1/52 part of the yearly differential rate being drawn weekly. After the actual group earnings have been determined for the month, the drawings are deducted from the amount earned and the balance is credited, part to cash and part to a reserve account. While each associate draws part of his share of earnings in cash, he contracts to maintain the balance as a reserve account. This reserve has varied in recent years between 25% and 35% of the estimated annual income but, by agreement, cannot fall below 5%. This is to be used to cover illness, vacations, and to maintain the level of drawings when drawings are not covered by earnings. So far, weekly pay checks have continued without interruption for over 19 years. Each associate receives a statement at the end of the month showing exactly how his payments have been determined. Incidentally, the calculations for the huge Milwaukee plant are easily performed by one clerk.

The yearly differential is a flexible figure and is established on the conservative side, because it is much more desirable to adjust pay upwards, rather than reduce it downwards, if it appears that drawings are likely to exceed earnings. The fundamental rule followed jointly by management and the union is that the drawing rate is fixed at a level sure to be covered by earnings. Since earnings are controlled by the value added to production and not by the drawing rate, if a reduction in rate due to a falling off of business were later found to be unnecessary, associates would automatically receive back the accumulated earnings. Similarly, increased prices or sales automatically adjust earnings to higher levels. The Nunn-Bush workers and their union have been extremely cooperative in accepting their responsibilities towards making the plan a success. Workers have kept their drawing rates low enough to enable them to build up reserve earnings to act as a cushion.

(next page, please)



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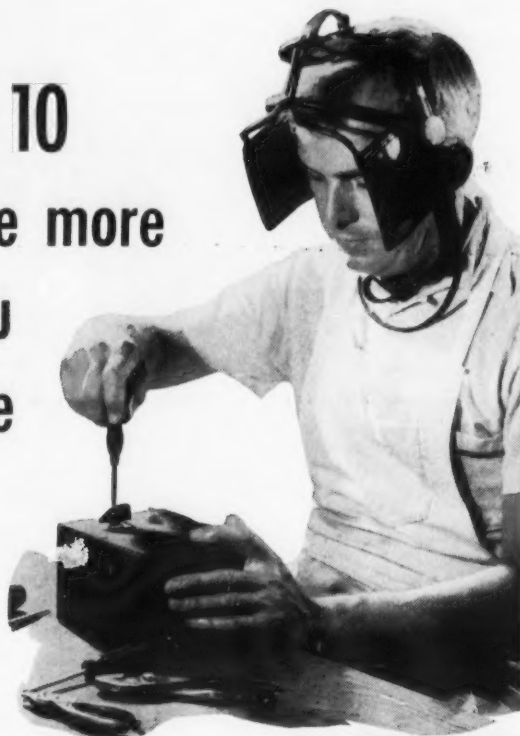
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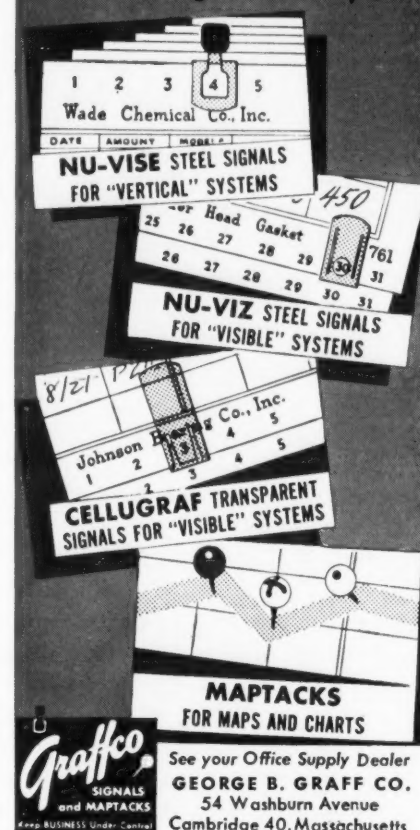
Philosophy behind the plan

The plan in operation represents sound and enlightened concepts of human relations, unswervingly dedicated to the perpetuation of our "free enterprise" system. The plan is predicated upon the belief that labor is not a commodity, but is part of an economic and social partnership together with capital and management. The plan was created to give workers their share of values created through production and, by the system of differential rates, it divides wages in proportion to the share each individual has contributed.

Workers' earnings increase automatically in times of rising prices, without their having to fight for increases. When the market took a dip on past occasions, the workers accepted reduced drawings with complete understanding. The coupling of earnings to values added by production limits the company's financial liability, and enables management to pursue a flexible price policy to meet changing business conditions. At the same time, workers' incomes adjust to the level of purchasing power they need.

Nunn-Bush's policy is unconventional and almost revolutionary, but their experience over the past 35 years has led them to believe that if labor is treated as a responsible partner in the enterprise it is thoroughly reasonable. The company took the initiative and deliberately surrendered their claim to dictate arbitrarily to their workers, and instead solves common problems through joint participation with the workers and their union. The company maintains that "share-the-production" workers cooperate because they are partners, and are acutely aware of the fact that what benefits *capital* and *management* must of necessity benefit *labor*. Therefore, both management and labor understand that increased earnings can only come from increased production and better quality, within competitive cost limitations. Both are remunerated, not by capital, but by the consumer. In the final analysis, although improvements and modifications are still needed, the plan has worked out in practice to the satisfaction of all concerned. *m/m*

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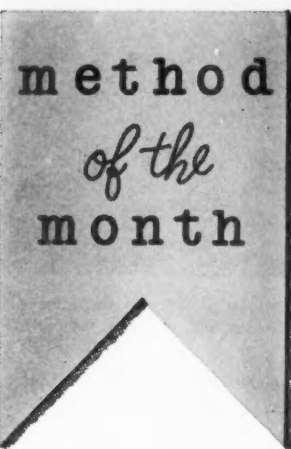
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(Circle 502 for more information)

methods



How a telescriber gave Raytheon 5 BONUS EMPLOYEES

by William S. Wright, Works Manager
Raytheon Mfg. Co., Chicago

Prior to the installation of a telescriber system, we had a complicated system of routing the information concerning the receipt, inspection, and disposition of incoming material. This brought about a considerable loss of time and, in addition, created unnecessary work duplications.

Previously, when a shipment arrived in the Receiving Department, we removed the packing slip, got a copy of the original purchase order from our files, and posted the articles received against the purchase order. Then, we partially made out an eight-part, interleaved, carbonized form, and placed this ticket with the articles received.

This operation often delayed the inspection of the material, since the Incoming Inspection Department was required to wait until the Receiving Department had filled out the first part of the Receiving Ticket. Only when this Receiving Ticket was placed with the shipment by the Receiving Department,

could the Incoming Inspection Department test the material. They then completed the Receiving Ticket, indicating the acceptance or rejection of the shipments, as well as its routing into either stock or the Return Goods (Salvage) Department. The other seven leaves of the Receiving Ticket were manually delivered to all of the departments concerned.

The time lapse between the arrival of a shipment at the Receiving Dock and the notification of its arrival by means of this Receiving Ticket, delivered to the various departments, was usually two or three days. Because of this delay, the Expediting Department would often incur loss of time and money through the expediting of shipments that had already arrived. The Production Planning and Material Control Departments were hampered by incomplete inventory information, and the Accounting Department had to do extra filing work because of the time

lapse between the receipt of an invoice and the receipt of corresponding Receiving Tickets.

When successive shipments, posted against the purchase order copy in the Receiving Department, had filled the complete purchase order, a Receiving Report was mimeographed. Nine copies of this report were distributed manually to departments concerned.

These operations have been eliminated as a result of procedural changes effected through the installation of telescriber service. This system has improved and speeded up the handling of all incoming materials in the following manner:

When a shipment arrives at the Receiving Dock, the packing slip is taken to the telescriber at the Dock. The information on the packing ticket is transcribed and is simultaneously received on six receivers comprising the Receiving Ticket System. The Receiving Department's copy is placed with



LEFT: An operator writes up the original form on her telescriber master in the Receiving Department. Copies are transmitted automatically to six other departments which require notification of material arrival. **BELOW:** These forms contain the telescribed information received by the various departments.

RAYTHEON TELEVISION & RADIO CORP. FORWARDING TICKET			
REMARKS OR VENDOR		DATE	
ORDER NO.		MODEL	
PART NO.		DESCRIPTION	
AMOUNT TO	STK.	PRD.	R. G. NO. OF CONTAINERS

RAYTHEON TELEVISION & RADIO CORP. RECEIVING TICKET			
VENDOR		DATE	
ORDER NO.		MODEL	
PART NO.		DESCRIPTION	
QUANTITY	PACKING SLIP NO.	NO. OF UNITS	

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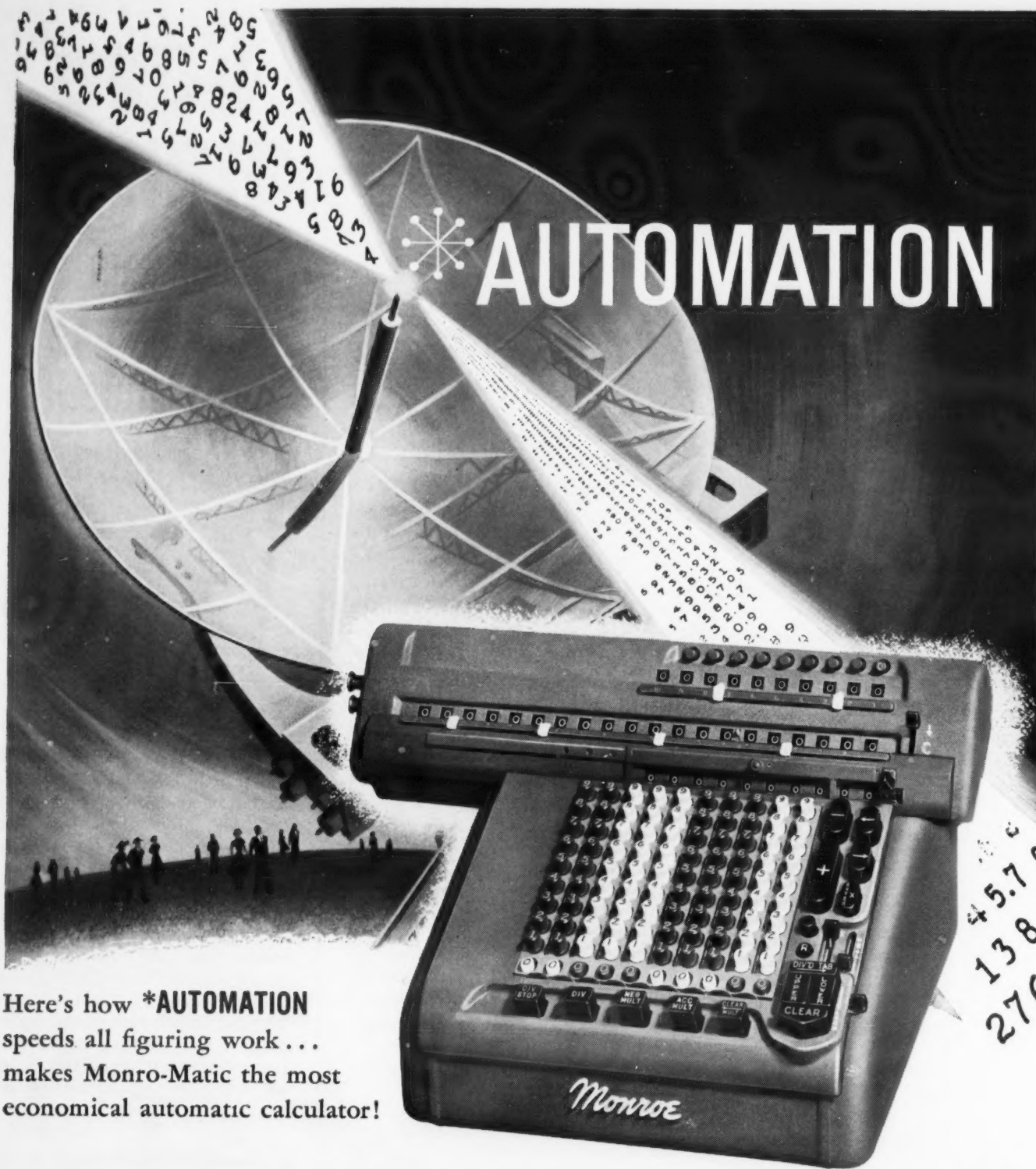
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OPERATORS WHO KNOW... PREFER **MONROE** CALCULATING, ADDING, ACCOUNTING MACHINES
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An employee in the Material Control Department receives information from one of their machines.

the shipment and moves with the material to its ultimate destination.

As this notification is received in the Incoming Inspection Department, they immediately prepare for testing as the material arrives. When testing and inspection have been completed, the operator for the separate Forwarding Ticket System completes notification of the disposition of the shipment. If the shipment passes inspection and is accepted, it is routed to the Stock Room. The Material Control Department is notified accordingly on the second receiver located in that department (the first receives information pertinent only to the Receiving Ticket System).

If the shipment does not pass inspection, it is routed to the Return Goods Department. Both the Return Goods Department and the Material Control Department (the third receiver) are so notified by the Forwarding Ticket System.

The Material Control Department is the focal point of the Receiving Ticket and the Forwarding Ticket Systems, and its three receivers are provided with information on:

1. The receipt of a shipment on the Receiving Ticket.
2. The acceptance of a shipment on the Forwarding Ticket (using green ink for identification).
3. The rejection of a shipment on the Forwarding Ticket (using red ink for identification).

This information provides the Department with a complete and up-to-the-minute inventory control.

With the elimination of the extensive posting required on the previous forms, in the Receiving Department alone, it has been possible to move five employees to other departments. Total savings in overhead of this Department amount to \$35,000 annually. m/m

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"WORKSHOP
FOR
MANAGEMENT"
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back guarantee**

A verbatim transcript will be made of all proceedings at the Systems and Procedures Association Annual Meeting for publication as a book, it has been announced by the SPA. Publishers of the hard-bound volume, which is expected to run about 500 pages, will be Management Magazines, Inc., publishers of MANAGEMENT METHODS.

A special feature of the book will be a detailed cross-index to the subject matter covered in each of the thirteen simultaneous Seminars, as well as in the direct news sessions.

A hand-book for management men

Like the Meeting itself, the book will be designed specifically as a reference and operations manual for management personnel. Priced at \$19.00 a copy, the publishers will offer it on a money-back guarantee policy.

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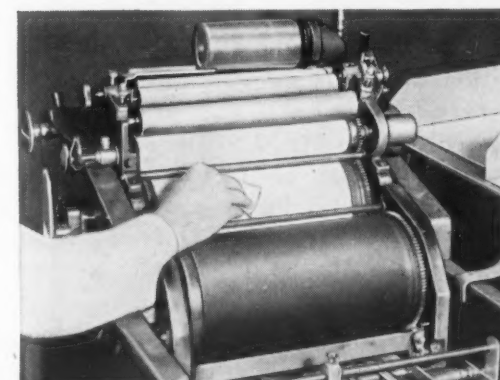
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positive paper plate... from original to
running press in 90 seconds!**



1—Lay translucent copy over Ozalith, and expose in any Ozalid machine or similar light medium.



2—Place the exposed Ozalith on the printing cylinder of any small offset press.



3—Rub over exposed surface with developing fluid, then fixer, and the Ozalith is ready to print.



Now for the first time... you have Ozalith—a positive paper offset plate that can be made directly from any translucent original.

Just place the original on the Ozalith plate, and expose in an Ozalid machine—Bambino to Printmaster—or any similar light medium.

Put the exposed plate on the press cylinder, swab with developing fluid and fixer, and it's ready to print. The whole process takes less than 90 seconds!

No darkroom, negatives, trays or dryers are needed. And this new paper plate is so inexpensive that it needn't be filed. Overruns are unnecessary. One translucent copy enables you to make quickly a new plate if more copies are needed.

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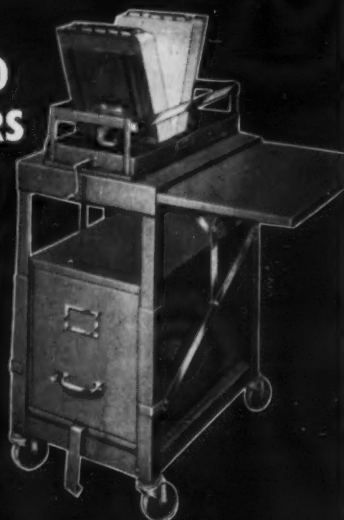
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THE IMPORTANCE OF tax planning

FOR CLOSELY-OWNED CORPORATIONS

by Paul E. Orr, Jr., President
Management Planning, Inc., Princeton, N. J.

Proper tax planning assumes major importance in the case of closely-owned companies, not only because growth is largely determined by the amount of net earnings after taxes that can be kept in the business, but also because taxes have a tremendous leverage effect on the net profits of such a business and on the personal wealth of its owners.

In a typical closely-owned business, the problems of the company and the individual problems of the owners are inextricably tied together. Usually the business interest is its major item in the owner's personal estate. It must, therefore, be related directly to whatever personal plans he has in mind for himself and his family. In fact, one of the most serious tax problems facing the closely-owned company is the value of its stock for gift and estate tax purposes.

The common practice in the past has been for stockholders in such a company to wait until taxable transactions have occurred and then argue with the government as to the fair market value of their stock, with resulting needless expense, litigation and uncertainty. This is giving way to a different approach—taking steps in advance to control such situations. It is possible to establish the value of closely-held stock so as to prevent litigation and also forestall any unreasonably high taxes.

An essential tool in this advance planning is a scientific valuation of the company and its stock. The valuation is kept up to date periodically and used in all transactions involving the stock. Another advantage of this method is that it gives the owner of unlisted stocks a substitute for the market quotations on publicly-owned corporations which are published in the newspapers for shareholders to read. m/m



Photo taken at Jackson & Perkins Co., Newark, N. Y.



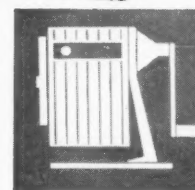
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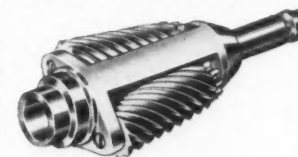


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(Circle 453 for more information)

methods

Charts can be
made quickly and
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management

aid

chart

Management at Lukens Steel Company found that they needed a sensitive barometer of market facts to interpret the business outlook. To meet this demand, their Commercial Research Department was given the job of developing a method of presenting vital sales and market data to top management.

They decided that it should be a visual presentation in order to get across the most information in the least amount of time. Graphs and bar charts were chosen as the practical visual aid to use. A relatively new technique of preparing them was decided upon, since it eliminates all drafting. Anyone can revise or keep the charts up to date in but a fraction of the time required by other methods.

This factor is important at Lukens, because the speed with which market data can be brought up to date at the close of a period (they operate on the 13-periods-per-year basis) plays an important part in their value.

A major decision was the selection of facts to present to management. Key data fall into five principal categories: (1) *The current outlook of major industries in the capital goods segment of the economy*

(2) *Over-all performance in comparison with the steel industry as a whole*

(3) *Performance by product*

(4) *Performance by market*

(5) *Performance by geographical area.*

Under each of these groupings were four to eight subdivisions. For example, under *current outlook*, it was deemed

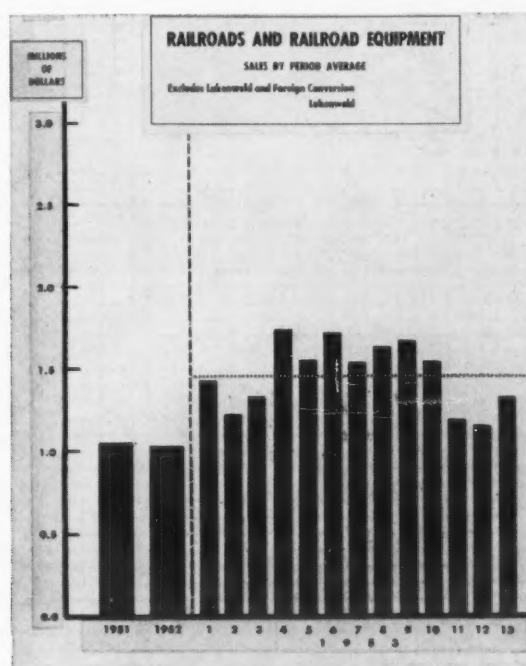
advisable to present data on the outlook of major capital goods industries—iron and steel; heavy electrical equipment; special industrial machinery; and construction, mining, and oil field equipment. Also included under this category was the value of new construction and orders and shipments vs. total capital goods orders and shipments.

Over-all performance, in comparison with the steel industry as a whole, was broken down into a presentation of:

(1) *total shipments and total new orders*, (2) *shipments vs. estimated sales level*, (3) *operating rate*, (4) *participation in the steel plate market, both carbon and alloy*, and (5) *Lukens' shipments vs. industry's shipments*. The product, market, and area data were similarly broken down. A "Market



ABOVE: Latest data is added to charts by an office worker. RIGHT: Graph lines and bars are pre-printed on adhesive tape and simply adhered to the plastic graph sheet.



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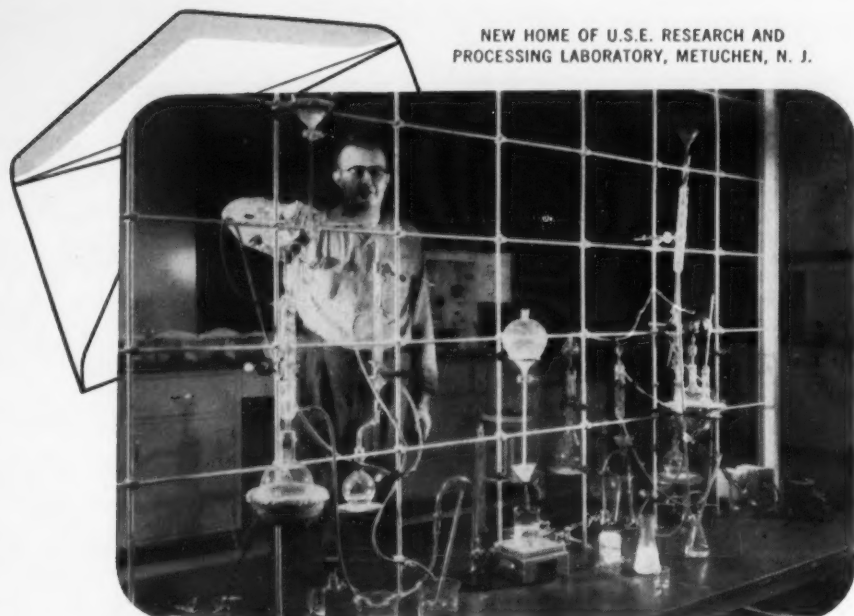
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VVX the improved synthetic-type seal flap gum, is a recent graduate, having passed all final tests. It offers visibility, instant tack with normal moistening, positive seal by "hand" or machine, neutral taste, pressman's OK, and resistance to curl and humidity.

VVX is now being used on all stock Commercial and Official sizes of White Waves and Bonds. Ask for samples.

Behind these Doors

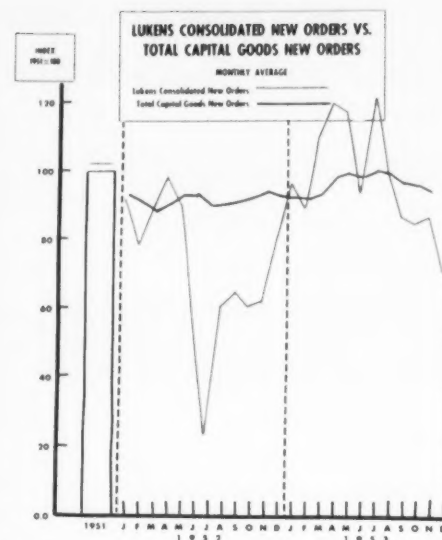
. . . the U.S.E. Guarantee has its roots. Here in this modern laboratory experienced technicians with improved instrumentation continue their never-ending task—to make sure to make better every U.S.E. product. That's why it pays to specify U.S.E. envelopes.

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15 DIVISIONS FROM COAST TO COAST

(Circle 500 for more information)



One of the Lukens charts prepared by an office worker in one of the many color combinations.

Facts" board was designed and constructed for mounting the 26 graphs and charts required to present the foregoing information.

All charts on the "Market Facts" board are brought up to date in a single afternoon. The system works as follows: titles, ordinates, and abscissas are affixed to a plastic board. This is done by typing, handlettering, or printing the required information on self-adhering forms or pre-printed statistical rolls and simply pressing them to the board. This phase of the chart-making is done only once—when initially setting up the chart.

The next step is to apply the lines and bars of the graph or chart. This is accomplished by the use of adhesive tapes printed with a wide selection of solid lines, dotted lines, broken lines, heavy lines, thin lines, solid bars, cross-hatches, hollow bars, etc. To further add to the available variety, markings come in a wide assortment of colors. To put in a given line on a graph or chart, all that is necessary is to unroll the tape having the desired marking to the proper length, press it in place, and cut it off. To bring the chart or graph up to date, all that is required is the addition of another length of tape. Tapes can be removed and new graphs constructed without in any way damaging the plastic board or basic chart material.

Once the charts have been brought up to date, they are analyzed and their significance explained to various management groups at specially-held meetings. Charts are always explained in terms of the audience group. For example, certain points which would be emphasized before a production group might be omitted before a sales group.

The system used in preparing the "Market Facts" board is also used in preparing charts and graphs for other purposes—for reproduction in reports and in company house organs, for example. In addition, the system is expected to be used in financial and production-control work presently. m/m



Facts Board devised by Lukens Steel Company for presenting latest market data to management groups. This information is analyzed and explained at meetings that are held especially for this purpose.

thought starters

Thought Starters deal with a "practical solution to a management problem." The Editor invites contributions—which are paid for at our normal space rates.

PERSONNEL

thought starter

A pattern for the writing of job descriptions

Leslie M. Slote
Ass't. to the Pres.
Kelay Manufacturing Co.
New York, New York

The form that a job description takes depends upon what use is to be made of such descriptions; i.e., will they be used for job classification, evaluation, hiring, etc.? My company has developed simple, effective job descriptions that serve our needs — in particular by allowing management the prerogatives of determining the content of a job and deciding whether a worker qualifies for the classification.

An actual example of a factory job description is used to illustrate how this is accomplished (clerical job descriptions follow along similar lines).

1) Job description of a "Lathe Operator B" used for classification purposes:

"Performs lathe turning and related operations under general supervision. Involves such operations as rough-turning rotors, stators, collector rings, jam collars, and other sub-assemblies and parts, or other assigned work to specified tolerances. Required to do some finishing to fairly close tolerances. Ability to make simple or partial set-ups from verbal instructions. Ability to use common lathe cutting tools and precision measuring instruments required for production. Ability to work from simple drawings and prints. Instruction and supervision available to solve all job problems."

2) The same description is used as a guide for hiring, but requires the following additional information:

"Minimum of ten months recent experience as a lathe operator. Ability to rough turn to a tolerance of 0.001. Ability to form and sharpen tool bits. Ability to use micrometer and dial comparator. Ability to use simple shop arithmetic."

3) For evaluating jobs, we use a point-rating plan, in which each job is evaluated in terms of eleven factors with varying degrees for each factor. We modify the original description by adding specific qualifying statements as shown below. This example is used only for illustrative purposes and is, therefore, not shown in its entirety.

JOB FACTOR RATING SPECIFICATIONS

Education:

Ability to read and write English, use shop arithmetic, interpret simple prints, read scaled measuring instruments, and is technically trained as a lathe operator.

Experience:

Satisfactory job performance attained after six months on the job.

Initiative and Ingenuity:

Ability to work from detailed instructions, make minor decisions involving use of some judgment in making set-ups and working from specifications. Skilled in lathe turning, use of cutting tools, and measuring instruments.

Mental or Visual Demand:

Frequent mental and visual attention required. Flow of work intermittent, operator waits for lathe to complete cycle. Close attention required when setting up, adjusting, and when checking dimensions.

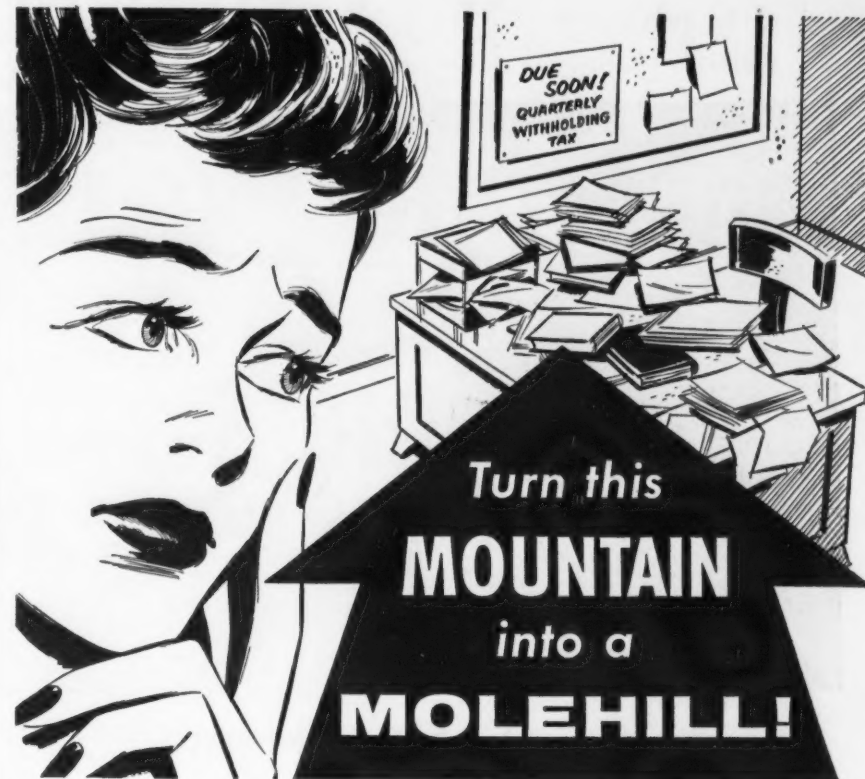
Although there are many patterns to follow in writing job descriptions, we have used the above for several years with much success.

PACKAGING

thought starter

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Employing a novel use of corrugated cardboard, Karl Seiler & Sons, Inc.,



Put the Todd **FORM-MASTER** System to work on your payroll records

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Why not take steps right now to prevent a repeat performance of this scene next January?

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If you haven't already asked for details about the Todd FORM-MASTER System, mail coupon now. There's no time to lose.

THE TODD COMPANY, Inc., Rochester 3, N. Y., Dept. MM

Gentlemen: I'm interested in learning how the Todd FORM-MASTER System can help us prepare quarterly payroll tax reports. Please have your representative contact me for a demonstration—without obligation on my part.

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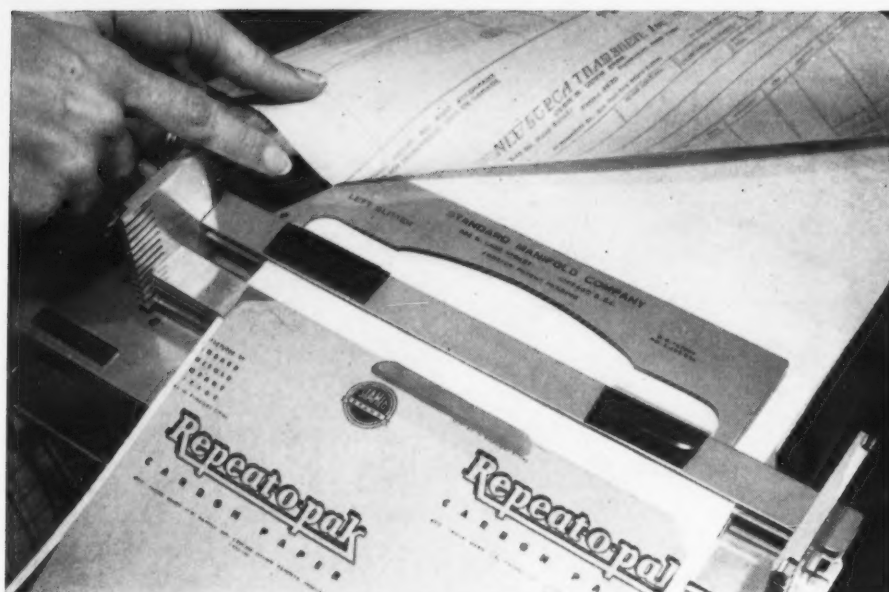
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Philadelphia, has packaged its food products in containers fashioned as log cabins. The corrugated board not only assures delivery of the product in good condition but, when the contents are removed, the package becomes a toy for the youngsters. The log cabin has boosted their sales over 43%.

PHOTOCOPYING *thought starter*

95% of re-drafting time eliminated by photocopying

Donald K. Vater, Chief Draftsman
Hancock Valve Division
Manning, Maxwell & Moore, Inc.
Watertown, Massachusetts

We are constantly called upon to supply slightly modified versions of our standard valves. These special orders require new assembly drawings for customer approval. The drawings formerly occupied a great deal of our drafting time.

We now make the new drawings for the special valves by taking the 8½" x 11" planograph prints of our standard designs and altering them either with pencil or with India ink. The



altered planograph print then becomes the master drawing for the special valve and from it we make clear, sharp photocopies under daylight conditions in about one minute.

The method has not only reduced drafting time by 95%, but has also expedited the process of providing special drawings for customer approval. It also allows us to use an 8½" x 11" file drawer for filing these new master drawings instead of the

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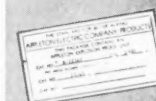
... ALL IN ONE OPERATION



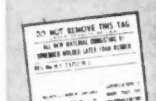
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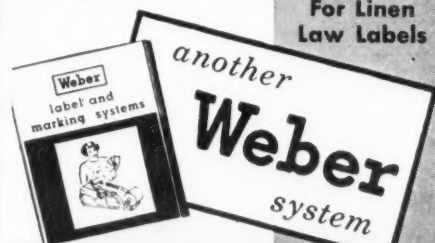
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methods

usual large 28" x 40" drawers required for full-size drawings.

RECORDS

thought  starter

Microfilm records can now be stored in atom-proof vaults

A new atom-proof storage service is now available at low cost throughout the country. Microfilm copies of vital business records can be stored, safe from atom bomb blasts or any other known destructive force.

Charges are extremely low; for example, a metal cylinder which will hold 16mm microfilm files of over



30,000 records can be secured for only \$10 for a full year. Bulk storage and private vaults are also available at correspondingly low costs. The material is picked up and delivered to the storage vaults as part of the service.

For more information, circle number 561 on the Reader Service Card.

PERSONNEL

thought  starter

Proper interview one of best methods of employee selection

The interview is the most widely used of all methods of personnel selection. Its reliability, however, is not constant and numerous studies have found that the employment interview makes little prediction of an applicant's future job success. Scientific techniques of personnel evaluation have been developed to help make the interview a more predictive instrument.

The cost of hiring, at the rank-and-file level, is about \$300 per applicant. This includes recruiting expense, interviewing, testing, placement, orientation, training, and supervising the new-

Comptometer Enters
Office Dictation Field

COMPTOMETER OFFICE NEWS

New Economy Seen
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HIGH-FIDELITY TRANSCRIPTION Reproduces True Voice Tones



The new Comptometer dictation-transcription machine sets a new standard in voice reproduction through the use of high-fidelity electronics. High fidelity has long been the ultimate in recording but bulky parts and equipment, previously necessary, discouraged its use for offices. Comptometer has overcome bulk and weight to achieve a new triumph in compact engineering. Utilizing magnetic recording instead of needles or other cutting tools eliminates scratches and clicks. In addition, Comptometer's high fidelity records within the voice range and effectively screens out most interfering office noises. Dual speakers (a confidential, or a conference-type loud speaker) playback with true fidelity. The result is a remarkable reproduction of the dictator's voice to aid in transcribing. Secretaries, even beginner-typists, find they can more easily distinguish difficult words or phrases. This new ease in transcribing means more efficiency and speed with resultant savings.

*If ever damaged, Comptometer will repair or replace any Erase-O-Matic Belt when returned to the factory along with 35c to cover postage and handling.

Comptometer announces new dictation method

A high-fidelity machine that promises to bring new economy in office dictation and transcription is being introduced to the nation's businesses. Manufactured by Comptometer, long a prestige name in office equipment, this new machine features the Erase-O-Matic recording belt, which is guaranteed* for life against wear, tear, heat, cold or moisture. Unlike conventional dictating machines that rely upon costly expendable materials for their recording medium, Comptometer's Erase-O-Matic belt is made from Mylar, an almost indestructible material. Of greater interest than its durability is Erase-O-Matic's ability to be re-used hundreds of times, eliminating the need for expensive replacement belts. This perpetual feature is based on the magnetic recording principle, used so effectively in radio and television. Old dictation can be entirely erased in seconds simply by holding the Comptometer Magnetic-Eraser bar against the belt.

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Executives may now accomplish perfect dictation, without pauses, errors or corrections, because of Comptometer's unique Erase-O-Matic feature. Instead of adding a correction, as in most machines, the dictator simply reverses to where the error was made and dictates the corrected words which automatically wipe-out the error as the new is recorded.

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hire until he reaches a production commensurate with his wages. Every turn-over the company has costs a minimum of \$300 at the rank-and-file level and \$1,000 or more at the key personnel level. During his average working lifetime, an employee will be paid an average of \$100,000 in direct wages, and welfare and retirement benefits. An investment decision of this magnitude in other departments of a company would be given very close scrutiny and consideration. Investments of this amount, however, are made in new-hires everyday and often on a subjective basis.

Management can employ three methods to make the interview a more predictive instrument: (1) Weighted Application Blank, (2) Personnel Tests, and (3) Structural and Non-Directive Interview.

Integrating the weighted-application information, his interview observations, and the personnel tests, the interviewer arrives at the qualification level of the applicant for the proposed job. If the applicant qualifies, the interviewer makes telephone and reference checks on the accuracy of the applicant's information. He informs the applicant about the details of the job, so that the applicant does not feel it was misrepresented. The end result is a more objective appraisal of chances for personal adjustment to the job.

For further information on interview procedures, circle number 566 on the Reader Service Card.

"worth

Methods man's job: "I think that the most important job of the systems man is to always keep in mind that what he is doing is performing a service for the various departments. I think that one way you can stop the usefulness of a systems department, but quick, is to give the systems man the responsibility of making some decision along these lines. The minute he starts to administer a job, he ceases to be a service man that was helping someone else do his job and, at that moment, rivalry automatically starts up, and resistance can't help but build up." *Edward J. Hanley, President, Allegheny Ludlum Steel Corporation, in "Systems and Procedures Quarterly."*

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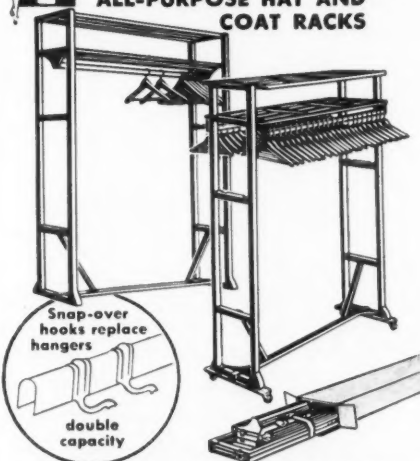
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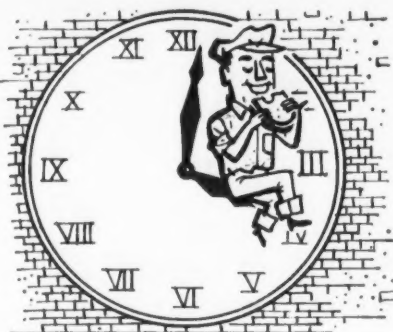
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methods



How to spend a lunch hour

A little publicized but daily part of many company recreation programs is a group of lunch hour activities. These range from pinochle to ping pong, and large numbers of employees participate with astonishing regularity.

The key to a successful program would appear to be moderation. Because of the time element (usually 30 minutes), employees who participate in athletic activity must either gulp down their lunches or eat piece-meal on company time and then race to the play area. For the not so young in heart, a variety of card games seems to be the prevailing choice. Movies have been added by some companies, and television sets have been showing up. Some managements have found that movies and television have been the means of inducing employees to eat their

lunches in company lunchrooms or cafeterias, rather than in the shop.

A recent survey showed that the larger the company, the larger the lunch hour activities program. Small shops are frequently handicapped by a lack of space and time. The foregoing table shows the lunch hour activities reported by 35 companies and the extent of the lunch hour program by five company size groups of 7 companies each.

Here are four typical programs of lunch hour activities classified by company size:

Company 1: (1,000 and over)

Factory workers have 30 minutes for lunch, office workers, one hour. Lunch hour activities include pinochle, bridge, horseshoes, table tennis. There is a formal program for women with travel talks and films, films on educational subjects, and book reviews.

Company 2: (500-999)

Lunch period for factory workers is 30 minutes, for office workers, one hour. Activities include pinochle, bridge, cribbage, ball tossing, checkers, and films.

Company 3: (100-499)

Factory workers have 30 minutes for lunch, office workers, one hour. Activities include pinochle, horseshoes, ball tossing, and sun bathing (men).

Company 4: (50-99)

Factory employees have 30 minutes for lunch, office workers, one hour. Activities are checkers, ball tossing, canasta. m/m

From a survey by the
Associated Industries of Cleveland

Activity	No. Factory Employees
	Companies Reporting
	1,000 plus
	500-999
	100-499
	50-99
	1-49
Pinochle	20 7 5 6 0 2
Bridge	11 4 4 3 0 0
Ball Tossing	9 0 2 4 2 1
Horseshoes	7 3 1 3 0 0
Chess	5 2 3 0 0 0
Softball	4 2 0 1 1 0
Checkers	4 2 1 0 1 0
Table Tennis	2 2 0 0 0 0
Volleyball	2 1 0 1 0 0
Sun Bathing	2 1 0 1 0 0
Films	2 1 1 0 0 0
Football Tossing	1 0 0 1 0 0
Hand Tennis	1 0 0 0 1 0
Cribbage	1 0 1 0 0 0
Rummy	1 1 0 0 0 0
Canasta	1 0 0 0 1 0
Book Reviews	1 1 0 0 0 0
Library	1 1 0 0 0 0
None	10 0 1 1 3 5

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How to make out a payroll in a hurry

by John Moryl, Chief, Tabulating Dept.
McCormick Works, International Harvester Corp., Chicago

Electronic accounting machines make out weekly paychecks and related payroll reports for our 4,600 employees in about 440 man hours, at calculating speeds of up to 6,000 keypunched cards an hour.

Although time and cost saving is important, electronics also enables our executives to obtain detailed operations data quickly enough so that it can be used as the basis for management decisions. About 1,000 of our employees are paid on a salary basis; the rest, on an hourly base rate plus piecework plan. The payroll computation for both groups is generally the same, except that the piecework computation is much more detailed.

The piecework payroll computation begins with a set of time cards filled out by each employee. The card contains three basic types of information: the base rate, the number of units of a particular item produced, and the



MACHINE NO.	PIECES	DESCRIPTION	REASON	HOURS	CLOCK NO.	AMOUNT EARNED	NAME	DATE
111	222	333	444	555	666	777	888	999

DESCRIPTION	UNIT	PIECES	AMOUNT	DATE	REASON	HOURS	CLOCK NO.	AMOUNT EARNED
111	222	333	444	555	666	777	888	999

PHOTO ABOVE: A tabulator, which prints keypunched data calculated by the computer, enables them to prepare paychecks and control reports automatically, directly from the keypunch cards. FORMS ABOVE: "B" and "C" tabulating payroll cards.

amount of time required to produce them. In a typical day, an employee will work on more than one kind of item. A milling machine operator, for example, may handle two or three different types of castings. Each part being processed at the McCormick plant is designated by a catalog number. Generally, separate time cards denote the work chargeable to each number.

For a given day's work, the employee will receive a base rate and a piece rate, and perhaps one or more additional types of pay, such as overtime or premium pay for night work. Usually a separate card is also used to record the hours chargeable to each type of

pay rate. Thus, he will accumulate several time cards, some of them representing work on different kinds of units, others showing different pay rates.

These A cards are processed daily by keypunch operators in the tabulating department. They transcribe the written information by keypunching the proper holes on each card. The result of this operation is a stack of perhaps 10,000 keypunch cards. The next step is to multiply hours by rate or pieces by rate on each card to find the worker's gross earnings for that particular portion of his working day.

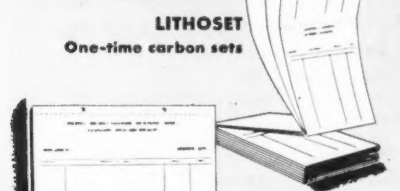
The hourly and piecework rate calculation completes the first step of the

methods

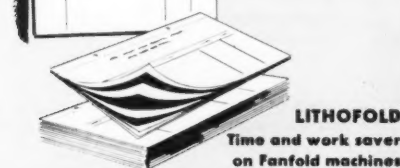
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october 1954

payroll computation. This step is repeated each day, as time cards are received in the Tabulating Department. Then, at the end of the week, when checks are made out, the *A* cards form the starting point for the rest of the computation. By this time, of course, there are more cards—usually a total of about 50,000.

Before each worker's paycheck is figured, the size of the time card pile is reduced from about 50,000 to about 10,000. Cards bearing different catalog numbers, as well as those showing different rates of pay, are summarized into a *B* card. But each employee is still represented by three or four *B* cards. The reason is that, during the week, he has performed three or four different types of work. Our milling machine operator, for example, may have spent 10 hours on rework; he may have devoted two hours to moving his finished castings to the next machine. Each type of work, designated by an account number on the *A* card, is totaled on a separate *B* card.

The next step is to summarize each worker's collection of *B* cards into one final payroll summary card, which shows total hours worked and total gross pay for the week. This final summary is put on a *C* card, which is used in making out the check. Data is transferred from the *A* card to the *B* card, and from the *B* card to the *C* card, with the aid of an electronic tabulator, at a speed of about 3,000 cards an hour.

At this stage of the operation, only the worker's gross pay has been put on the *C* card. To find net pay, it is necessary to compute several deductions. The following deductions are made from the earnings of plant employees: employee's annuity fund, social security, U.S. savings bonds, withholding tax, group life insurance, sick benefit, hospitalization, credit union, union dues, and miscellaneous charges (chiefly purchases of safety shoes and similar working materials).

Several figures are needed to compute these deductions — year-to-date earnings and number of dependents, to mention two. Also, there are more-or-less fixed percentages which enter into the calculation of withholding tax, social security tax, and bond deductions. This data is stored on two sets

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of keypunch cards. One stock contains a cumulative total of each employee's gross earnings for the year to date, the other shows all the other required deduction information. The data required for each week's paycheck is transferred from these cards to the C card with the aid of the tabulator.

After the deduction data has been transferred, the C cards are ready to be fed into the computer for the net pay computation. Basically, the computer "reads" the gross pay figure from the C card and subtracts the various deductions from it. In the process, the computer also figures the amount of each deduction from the information that has been transferred to the C card in the preceding step.

The social security deduction illustrates how the computer figures a deduction before subtracting it from gross pay. Under the law, the first \$3,600 of an employee's annual gross earnings are subject to the 2% social security levy. When the computer takes over this problem, it adds week's gross earnings to year-to-date earnings, then subtracts the total from \$3,600. If the answer is positive, the computer goes on to figure the 2% deduction. If the answer is negative, the computer stops figuring this deduction and goes on to the next one. But the computation is set up in such a way that if part of the week's gross earnings are subject to social security tax, the machine will figure the deduction on this fraction. (For example, the worker's gross earnings for the year to date may total \$3,550. His gross pay for the week may total \$150. In a case like this, the computer would figure the social security tax deduction on \$50.)

After each deduction is calculated, it is recorded on the C card. When all the deductions have been calculated, the computer subtracts them from gross pay and records the answer, net pay, on the C card.

The C cards are taken from the computer to a tabulator. Here, the employee's paycheck is made out, as well as a statement of earnings. In each case, the job is done automatically by transferring and reprinting information on the C card. The tabulator also makes out a "bank reconciliation card"



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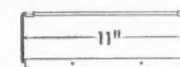
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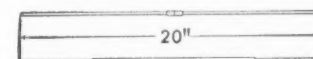
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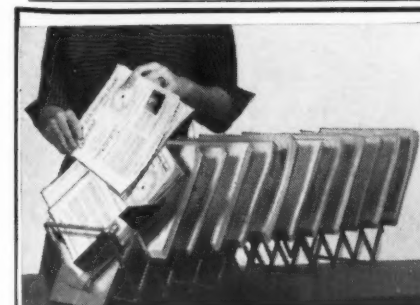
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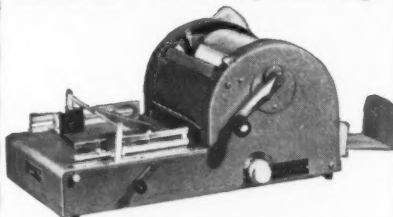
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7848 W. Hicks • Milwaukee 14, Wis.

(Circle 534 for more information)

from data contained on the C card. This bank reconciliation form shows, among other things, the worker's clock number and the amount of his net pay. When canceled checks come back from the bank, the corresponding reconciliation cards are pulled from a file and totaled. This figure is then balanced with the total represented by the checks, an insurance against arithmetic error. Any reconciliation card for which there isn't a corresponding check indicates an employee who hasn't converted his pay into cash. The card makes it easy to trace the employee and to find out whether he's lost the check or merely has been slow about cashing it. This procedure aids in balancing payroll accounts quickly.

The C card also helps prepare a cumulative earnings statement, which lists those deductions that have to be reported to the state and federal governments. Here, deductions shown on the C cards are added to cumulative totals for the year to date summarized on another set of keypunch cards. Then, every quarter or every year, when the government reports are made out, these latter cards are run through the tabulator and the information is transferred into a printed statement.

We don't confine the use of our calculating system to payroll purposes. When parts are shipped to dealers, the invoice data is tabulated on keypunch cards and the computer makes out the bill. The computer handles parts shipped from one point to another in similar fashion. In making some company products, other company products are needed. Under the IH cost accounting system, each plant is charged for the parts used in its manufacturing operations, which are obtained from other plants of the company, just as if these plants were outside suppliers. The computer also makes a detailed cost calculation on thousands of castings produced daily in our foundry and helps prepare reports for the materials control department.

Formerly, a total of 61,500 man hours a year was spent on preparation of dealers' invoices, including more than 5,000 hours of overtime annually. Today, that figure is down to a little more than 23,000 man hours, with virtually no overtime. m/m

To Kill the Invoices You Pay, You Must Cancel All Six . . .



Only Cummins Perforators Kill All 6 At Once...Neatly and Permanently!

PERFOTOPICS

A & P — Uses a Cummins Perforator for the perforation of invoices. "There is no question that this is an important function which is necessary to maintain the proper control on paid invoices."

Standard Oil, Louisiana — Uses a Cummins Perforator for the cancellation of paid invoices, accounts payable vouchers, journal vouchers, and their supporting papers.

Dow Jones & Co., Inc. — Finds the Cummins Perforator a valuable replacement for the date stamp. "We perforate the day's date through 20 to 30 charge tickets at a time. This is cleaner than a date stamp, and saves considerable time."

Kewanee Boiler Corp. — Uses a Cummins Perforator principally for canceling paid invoices. "However, we have considerable other canceling to do, all of which is done on the Cummins Perforator."

The one sure way to kill the invoices you pay, and supporting papers, is to cancel them with a Cummins Perforator — the machine that punches holes you can read in a whole invoice bundle in one swift stroke . . . with no skips or misses.

With modern business firms paying out from 3 to 10 times their net worth annually, it is plain smart to find out why more and more offices are turning from tedious, risky, one-at-a-time hand stamping to fast, safe Cummins Perforation.

IN BUSINESS AND BANKS SINCE 1887
Cummins

For full information, mail coupon or phone
Cummins Business Machines sales and
service offices in principal cities

CUMMINS BUSINESS MACHINES
Division of Cummins-Chicago Corp.
Dept. MM-104, 4740 N. Ravenswood Ave.,
Chicago 40, Illinois

Please send full information on Cummins
☐ Perforators ☐ Endorsers

Name _____
Name of Business _____
Address of Business _____
City _____ State _____

(Circle 462 for more information)

Is her time worth.... 20¢
an hour?



Ozalid branch offices

Atlanta, Georgia

1219 Williams Street, N. W.
Elgin 0351

Chicago, Illinois

1219 North La Salle Street
Michigan 2-7505

Detroit, Michigan

3815 West Fort Street
Tasipoo 5-0500

Indianapolis, Indiana

216 South Pennsylvania Street
Franklin 2481

Los Angeles, California

1001 North La Brea Boulevard
Hollywood 3-7181

Milwaukee, Wisconsin

315 West Court Street
Broadway 1-6934

New York, New York

350 West Fourth Street
Algonquin 5-2880

Rochester, New York

82 St. Paul Street
Hamilton 2893

San Francisco, California

933 Harrison Street
Yukon 6-2658

Schenectady, New York

1 Yates Street
Schenectady 7-7536

St. Louis, Missouri

1421 Hampton Avenue
Mission 7-1900

Syracuse, New York

2507 James Street
73-0285-6

Washington, District of Columbia

912 Twelfth Street, N. W.
Executive 3-6710

Ozalid distributors

Aberdeen, South Dakota—R. E. Huffman Co.

Alexandria, Louisiana—Reproduction Supply Agency

Amarillo, Texas—Browning Blue Print Co.

Austin, Texas—Douglas B. Burton

Baltimore, Maryland—Chas. W. Speidel & Co., Inc.

Beaumont, Texas—White Blue Print Co.

Billings, Montana—Selby Re-Print Co.

Birmingham, Alabama—The Re-Print Co.

Boston, Massachusetts—Spaulding Moss Co.

Brooklyn, New York—Brooklyn-Progress Blue Print Co.

Buffalo, New York—Commercial Blue Print Co., Inc.

Charlotte, North Carolina—Duncan Printmakers

Cincinnati, Ohio—The Ferd Wagner Co.

Cleveland, Ohio—City Blue Printing Co.

Columbus, Ohio—The Ferd Wagner Co.

Corpus Christi, Texas—Nixon Blue Print Co.

Dallas, Texas—Horn Blue Print Co.

Davenport, Iowa—Engineers Supplies

Dayton, Ohio—The Ferd Wagner Co.

Denver, Colorado—H. R. Meininger Co.

Business Machines Co.

Fernwood, Pennsylvania—Chas. W. Speidel & Co., Inc.

Fort Worth, Texas—Tarrant County Reproduction Co.

Helena, Montana—Helena Blue Print Co.

Houston, Texas—Yarberry's

Kansas City, Kansas—The Drexel Co.

The Ozalid process.



THE OZAMATIC . . . Moderately priced table top model that can copy up to 1,000 copies an hour. Handles materials up to 16 inches wide, any length, as fast as 30 feet a minute. Invaluable for business systems, and volume copying.

The Ozalid Process . . .

is one of the fastest known methods of transfer reproduction . . . Original copy on translucent paper, cloth or film is placed over sensitized paper, cloth or film, then fed into an Ozalid machine . . . printed instantly by light, and developed quickly by reactive vapor—without negatives, carbons, stencils, or inks . . . Ozalid prints are sharp, delivered dry, ready for use, inexpensive.

First employed to replace blueprinting of architectural and engineering drawings, Ozalid was later used to copy letters, forms, records, statements, etc. Ozalid machines of various capacities now displace costly retyping and hand copying, save time and cut costs, for thousands of firms.

Innumerable applications

Anything written, typed, printed or drawn on translucent paper, cloth or film, can be copied easily and quickly with an Ozalid machine.

In most offices, the time spent typing or writing extra copies makes an Ozalid machine economical. Even in a small office, a machine soon pays its way.

New uses for Ozalid are discovered daily. The time saving and convenience features of the process suggest various applications in every business.

Correspondence

Copies of letters, memoranda, etc. can be made more quickly and cheaply by an Ozalid machine than by a clerk or typist, and at a marked saving. A letter size sheet can be copied in less than a minute, for less than two cents.

In many companies, incoming letters are now Ozalid copied—for record, and immediate distribution. Legible Ozalid

copies can be made of 75% of all letters on paper stocks ordinarily used.

Bulletins, reports

From the original copy on translucent paper, Ozalid copies are made in any quantity needed, at a saving in printing costs as well as time.

Extra copies, if later required, can be made from the original. Companies with branch factories and offices find Ozalid copies exceptionally serviceable.

Office forms

Many firms now have office and shop forms printed on translucent paper, so copies can be made in quantity, and quickly distributed.

On cumulative records, compiled daily, weekly or monthly, Ozalid copies save rewriting, permit faster dissemination of current figures.

The ease with which originals can be duplicated, changes and deletions made, saves hours and days for systems men.

(Circle 488 for more information)

...saves time wasted in copying ... adds efficiency... and cuts costs!

Order expediting

Orders, written on translucent forms, are copied for filling, credit, customer acknowledgment, shipping, accounting, inventory control, etc. One writing, and Ozalid can dispense with an enormous amount of routine clerical work, and get orders filled and shipped earlier.

On contract or custom orders, Ozalid copies are used to notify engineering, purchasing, production, and shipping departments, as to specifications, special equipment, shipping instructions, etc.

Accounting reports

An original statement on translucent paper, provides Ozalid copies for quick distribution, and assures accuracy without transcribing and checking.

Payrolls

Payroll records on translucent paper afford cumulative reports of wages and salaries, overtime, withholding taxes,

deductions, Social Security, etc.—at a large saving in time and work.

Tax Reports

Tax forms on translucent paper make multiple Ozalid copies easily available; save transcription, checking, errors, clerical costs. Many tax accountants have adopted the Ozalid process.

And Ozalid copies are accepted by the Bureau of Internal Revenue.

Billing

A translucent ledger sheet permits direct Ozalid copying for invoices and monthly statements; and saves manual copying, errors, and addressing.

Files and records

Translucent copies of statements, of sales, research and laboratory reports, prior orders, memoranda and references require little file space, and permit a considerable reduction in storage space. Ozalid copies are always available from

the originals, can be made at any time; and need not be returned for filing.

Drawings, prints, specs

A master copy on translucent paper, cloth or film, provides any number of copies needed now or later. Changes or modifications of the original can be made easily on intermediate copies.

Ozalid prints can be had in color; and with certain items in another color.

Ozalid is versatile

A wholesaler processes 1,000 orders a day with an Ozamatic, and one clerk does the work formerly done by seven.

Airlines make Ozalid copies of flight plans for multiple use.

A manufacturer has orders typed on translucent shipping tickets, and Ozalid copies speed up all phases of order filling.

A chemical company makes Ozalid duplicates of microfilms for exchange, distribution and classifying.

Oil companies make Ozalid copies of their drilling logs, production records, geologists' reports, etc.

A New York department store makes Ozalid copies of invoices, and is saving discounts formerly lost by delays.

A trucking company reports large savings by using Ozalid copies of freight bills, delivery and past-due notices.

A photographic studio produces proofs by Ozalid far faster than with photographic printing.

Law offices use Ozalid copies of briefs and reports. Trial testimony formerly printed is now reproduced from court stenographers' scripts, saving time, and costs to clients.

Get a demonstration!

Ask the nearest Ozalid distributor (see phone book) to show you what Ozalid can do to help solve your paperwork problems. Or write for literature and Ozalid specimens to 560 Ozaway, Johnson City, N. Y.

OZALID—A Division of General Aniline & Film Corporation . . .
From Research to Reality. In Canada, Hughes Owens Company, Ltd.

THE BAMBINO . . . Smallest, fastest, low-priced office model that copies anything typed, printed, written, or drawn on translucent paper up to nine inches wide, any length; and makes up to 200 copies an hour. Little larger than a typewriter, can be operated by anybody.



Knoxville, Tennessee—Knoxville Blue Print & Supply Co.
Las Vegas, Nevada—Las Vegas Blue Print & Photocopy
Lubbock, Texas—Lubbock Engineering Co.
Memphis, Tennessee—Wray Williams Blue Print Co.
Miami, Florida—Biscayne Engineering Co.
Midland, Texas—Permian Reproduction Co.
Minneapolis, Minnesota—H. A. Rogers Co.
Nashville, Tennessee—Arrow Blue Print Co.
Newark, New Jersey—E. G. Ruehle & Co.
Newark, New Jersey—Shaw Blue Print Machine Co., Inc.
New Orleans, Louisiana—Crescent Blue Print Co.
Oklahoma City, Oklahoma—Triangle Blue Print & Supply Co.
Omaha, Nebraska—Omaha Photographic Laboratories
Phoenix, Arizona—Acme Blue Print & Photo-Craft Co.
Pittsburgh, Penna.—Chas. W. Speidel & Co., Inc.
Portland, Oregon—Multnomah Blue Print Co., Inc.
Rockford, Illinois—Fincham Industrial Co.
Salt Lake City, Utah—Certified Engineering Supply Co.
San Antonio, Texas—R. H. Holland Co.
Savannah, Georgia—Savannah Blue Print & Drafting Co.
Seattle, Washington—Seattle Art & Photo Supply, Inc.
South Bend, Indiana—The Office Engineers, Inc.
Spokane, Washington—Abadan-Spokane, Inc.
Toledo, Ohio—Toledo Blue Print & Paper Co.
Tulsa, Oklahoma—Triangle Blue Print & Supply Co.
Wichita, Kansas—Bewal, Inc.

Bambino distributors

Albany, New York—Carl G. Hardy Company
Albuquerque, New Mexico—Jones Graphic Products Co.
Auburn, New York—Office Supply & Equipment Company
Bartlesville, Oklahoma—Bartlesville Stationery Company
Baton Rouge, Louisiana—Yarberry's
Bay City, Michigan—Typewriter Exchange
Belle Harbor, New York—Albert Abrahams Company
Belleville, Illinois—Belleville Typewriter Exchange
Binghamton, New York—Piersons of Binghamton, Inc.
Bloomington, Illinois—Paxton Typewriter Service Co.
Blue Island, Illinois—Watland, Inc.
Boise, Idaho—Boise Printing Company
Strawn's Office Supply
Butte, Montana—Gene's Blue Print Company
Micro Filming, Inc.
Cedar Rapids, Iowa—Standard Blue Print Company
of Iowa
Charleston, South Carolina—Walker-Johnson, Inc.
Chatham, New Jersey—General Photo Products
Company, Inc.
Cincinnati, Ohio—Ramsey Business Equipment
Colby, Kansas—Northwestern Typewriter Company
Columbia, South Carolina—Columbia Office Supply Co.
Columbus, Ohio—The Murphy Company
Cortland, New York—Payne Brothers Office Equipment,
Inc.
Dayton, Ohio—Roth Office Equipment Company
Decatur, Illinois—Haines & Essick Company
Denver, Colorado—Business Machines Co.
Des Plaines, Illinois—Photo Service, Inc.
Detroit, Michigan—Associated Business Aids
Charles P. Rabaut & Associates
Dubuque, Iowa—Thomas T. O'Toole & Sons
Elmira, New York—H. L. Treu Office Supply Corporation
El Paso, Texas—Jim Vance Custom Microfilm
Company, Inc.
El Segundo, California—Industrial Blue Print &
Supply, Inc.
Emporia, Kansas—Didde Office Supply & Printing Co.
Eureka, Kansas—Eureka Litho Company
Evansville, Indiana—Evansville Blue Print, Inc.
Flint, Michigan—Typewriter Exchange
Fort Wayne, Indiana—Vogel's
Fresno, California—Fresno Office Machine Company
Geneva, New York—Konen Equipment Company

(Circle 488 for more information)

The new quick way to make offset plates —with OZALITH!

Grand Rapids, Michigan—Maurice Polack, Inc.
Great Falls, Montana—The Copy Shop
Harrisburg, Illinois—Henry's Typewriter Service
Hays, Kansas—Northwestern Typewriter Company
Hempstead, New York—Eastern Camera Exchange
Hudson Falls, New York—State Office Equipment Co.
Huntington, New York—Eastern Camera Exchange
Hutchinson, Kansas—Wilson-Storm Business Systems, Inc.

Indianapolis, Indiana—Bob Ball Company
Indiana Blue Print & Litt Company
Indianapolis Carbon Company, Inc.
The H. Lieber Company, Inc.
Paper Service & Office Supplies, Inc.

Ithaca, New York—T. G. Miller Sons Paper Company
Jacksonville, Florida—Dowling Douglas Duplicating Machine Company

Jefferson City, Missouri—Bredeman & Bredeman
Kalamazoo, Michigan—Maurice Polack, Inc.
Kirkwood, Missouri—Claypool Rapid Copy Company
Lake Charles, Louisiana—Mac's Camera Shop

Lansing, Michigan—Maurice Polack, Inc.
Long Beach, California—Ace Blue Print Company
Los Angeles, California—Robert Ford Company
Art Royce Photo Supply Company
Smart Supply Company, Inc.
Southern California Stationers

Louisville, Kentucky—Electric Blue Print & Supply Co.
Office Equipment Company

Manhattan, Kansas—City Typewriter & Office Supply Company

Miami, Florida—Friesse Business Machines

Miami, Oklahoma—Dan Hensley Sales & Service

Missoula, Montana—Missoula Blue Print Company

Modesto, California—The L. M. Morris Company

Napa, California—Barwick Business Machines, Inc.

Newark, New Jersey—Paul Williams, Inc.

New York, New York—Capitol Stationery Company

Ecco Business Systems Company
General Photo Products Company, Inc.
Goldsmith Brothers
J. J. Lester & Company, Inc.
Ben Metz
S. Novick & Sons Corporation
Serval Products Company

Pendleton, Oregon—Tullis Office Supply, Inc.

Plattsburg, New York—Cotey's Office Equipment
Champlain Valley Business Machines Co.

Ponca City, Oklahoma—Kay Office Equipment

Redding, California—Central Office Equipment Company

Roslyn, New York—The Roslyn Press, Inc.

Sacramento, California—Sutter Office Supply Company

Saginaw, Michigan—Typewriter Exchange

Salinas, California—Dunn's Stationery & Equipment Co.

San Francisco, California—H. S. Crocker Company, Inc.

General Office Equipment Company
Hillhouse, Inc.
T. H. Wilton Company

San Jose, California—Sumner & Taylor Office
Equipment Company

Schenectady, New York—Culver Office Equipment
Company, Inc.

Springfield, Illinois—Reuter Business Systems

St. Louis, Missouri—Conner Universal Forms
Jerome, Inc.

Stockton, California—Morris Brothers

Syracuse, New York—Monroe Stationery Company
Standard Office Supply Company

Tallahassee, Florida—Dowling Douglas Duplicating Co.

Tampa, Florida—Office Equipment Duplicating Co., Inc.

Terre Haute, Indiana—Knapp Office Equipment

Topeka, Kansas—Capitol City Blue Print Company

Tucson, Arizona—Howard & Stoft

Tulsa, Oklahoma—Masoner's, Inc.

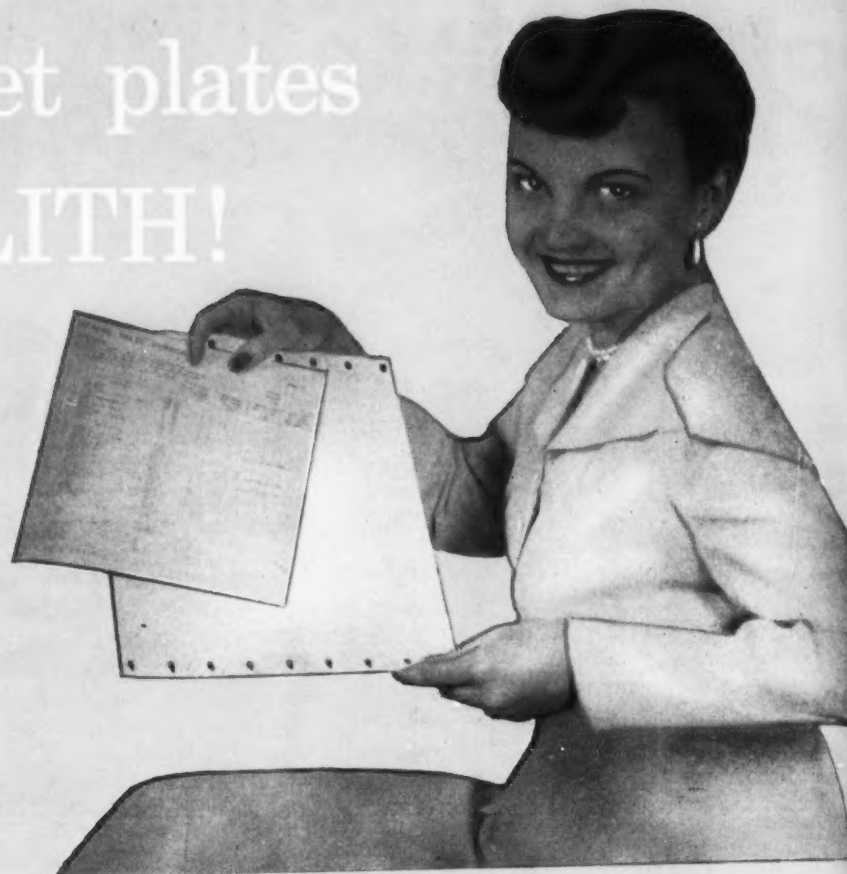
Utica, New York—Genesee Office Equipment Company

Van Wert, Ohio—Northwest Office Supply Company

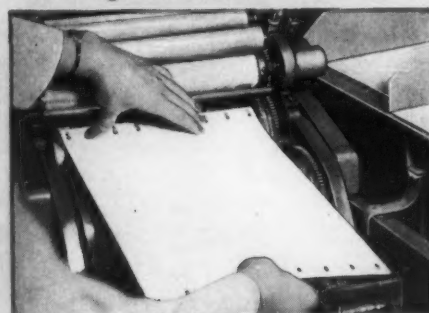
Washington, D. C.—MacGregor & Werner

Wolf Point, Montana—Basin Oilfield Supply

Yakima, Washington—Mogren-Rounds



(1) Lay translucent copy over Ozalith, and expose in any Ozalid machine or similar light medium.



(2) Swab exposed plate with developing fluid and fixer, place on press cylinder, and you're ready to run.

Ozalith is the first sensitized positive paper plate that can be made directly from any translucent original, and is ready for press in less than 90 seconds.

Place the original on the Ozalid plate, and expose on an Ozalid machine, Bambino to Printmaster, or any similar light medium. Swab the exposed plate with developing fluid and fixer. Fasten in place on the press cylinder and you are ready to run.

Darkrooms, negatives, trays or driers are unnecessary. The paper Ozalith is so inexpensive it needn't be filed. Overruns are obviated, because one translucent copy can make a new plate quickly, if more copies are needed.

Ozalith saves plate making time, costs and storage space. For samples and a demonstration, call the nearest Ozalid distributor.

While Ozalith paper plates are adequate for most reproduction needs, Ozalith is also available on aluminum for longer runs.

(Circle 488 for more information)

methods

asks the

experts

THIS MONTH'S EXPERT



Willard F. Rockwell, Jr.

President
Rockwell Manufacturing Co.

An industrial engineer by training, W. F. Rockwell, Jr. has been associated with his own and other companies in accounting, manufacturing, and engineering capacities for over fifteen years. He has been president and a director of Rockwell Manufacturing Company since March 3, 1947. His company has sixteen plants throughout the country, many acquired by purchase or merger with existing companies. Thus, he is well qualified to deal with the problem of communications in a decentralized operation.

A report to top management:

How to establish communications in a diversified and decentralized company

Product diversification and plant decentralization, when carried out on a broad scale, have many advantages as a management and operating philosophy. But they do create problems—particularly problems of communication. Here for example are two: first, how to select and transmit information to and from decentralized plants that keeps top management informed and, at the same time, encourages plant managers to make the right decisions under their own volition, sometimes at a moment's notice; second, how to develop and maintain a staff of competent men to produce and sell a presently diversified product line and prepare these same men to step in and supervise, within a short time, the manufacture of any new product the company may acquire.

My company is a good example. With headquarters in Pittsburgh, we have plants in 16 different communi-

ties and products that are sold to major markets. Our answer is a policy of *near-total* disclosure of operating information to a rather extensive group of management, production, and sales personnel. The range of subjects disclosed is broad and so is the list of employees who receive confidential data. In fact, the type of data which we depend upon to improve management efficiency would probably, in most firms, be restricted to the executive or board of directors levels.

The system is simple: subject classifications are broken into three categories—general, sales, and plant. This is not done for purposes of compartmentalization, but to get to the various groups the data they need and can use, with a minimum of wasted reading time.

To keep management and company employees informed of various plant activities a plant newsletter is pub-

lished containing operating information about each plant's performance and anticipated performance. The newsletters are written and edited by individual plant personnel and carry titles relating to their location and product category.

A *President's Letter* keeps management personnel informed of the company's current operating status, the outlook for operations on both a short and a long-range basis, and provides a means whereby I can pass on my views on a confidential basis without writing individual letters. The letter is mailed once a month, as soon as current operating statements are available, and it goes out to all plant managers and staff personnel. Each division's vice-president sends out a letter of his own, pertinent to the sales and operating portion of the *President's Letter*.

The letter opens with an analysis

Devices used to provide information of a general nature



President's Letter
Rockwell News (house organ)
Internal publicity releases
Bulletin boards
Letters direct to employees' homes
"Hour of Enlightenment"—information meeting
Annual general managers meeting
President's weekly staff meetings
Quarterly research and development newsletter
Letters to supervisors
Supervisory conferences
Individual supervisors meetings with own workers
President meets with employees every four months

Devices used to reach the sales personnel



Monthly regional managers meetings
Annual district managers meetings
Annual regional sales force meetings
Annual district sales force meetings
District manager's bulletins
Sales engineer's letters
A monthly divisional salesman's publication
Bulletins concerning current personnel changes

How to **SAVE MONEY** and **TIME** where you'd least expect it



REVO-FILE gives girl finger-tip control over thousands of cards from sitting position. Records come to the clerk. Saves lost time, motion.

"Like getting 60 hours work in a 40-hour week," say office managers who've changed from old-fashioned card files to modern Revo-Files.

YOU MAY NOT have realized it, but old-fashioned drawer and tub files actually "rob" a firm of time and efficiency. They wear out clerks, cause tension, errors, lost motion. All of which raises your operating costs. A simple change to modern Revo-Files stops these losses. No costly transposition job is necessary. You

use the same cards you have now. But what a difference!

Each Revo-File brings *thousands* of cards under finger-tip control. Eliminates lost time, motion, energy. Clerks use it from an easy sitting position. It's compact. Mobile. Takes only a *fraction* of the space you're using, now. If you have 3,000 or more active cards, being used for continuous reference and posting, it will *pay* you to check on Revo-File, today. Mail coupon, now, for full details!

Why Revo-File is the world's finest rotary file:

- Uses your present records. No costly changeover.
- Takes less floor space.
- Increases production.
- Reduces overhead.
- Cannot lose or damage records.
- Makes "in-out" filing faster.
- Mobile—move it where needed.
- Available in manual, automatic electric selection, and "high-boy" models. Accommodates all standard card sizes.

revo-file

Another fine product of **The Mosler Safe Company**

MAIL COUPON FOR **FREE** ILLUSTRATED FOLDER! ———

Revo-File Division
The Mosler Safe Company, Dep't MM-10, 320 Fifth Avenue, New York 1, N. Y.
Please send me your free, illustrated folder giving details on Revo-File, world's finest rotary card file.

NAME..... POSITION.....

FIRM NAME.....

ADDRESS.....

CITY..... ZONE..... STATE.....

(Circle 485 for more information)

of our previous month's operations, including sales, cost of sales, profits earned before taxes, earnings per share, etc. The figures shown are always compared to the previous month and the same month a year ago. Operating figures are broken down for each plant and major product line. The next major item is usually on the subject of inventories. An analysis of inventories is made to show where we stand in comparison with previous months. Figures are shown for each plant and warehouse on an increase/decrease basis from the previous month. A breakdown of raw materials, goods-in-process, and finished inventory are also shown. In addition to the figures, several paragraphs of the text cover the outlook for decreasing, increasing, or maintaining current inventories.

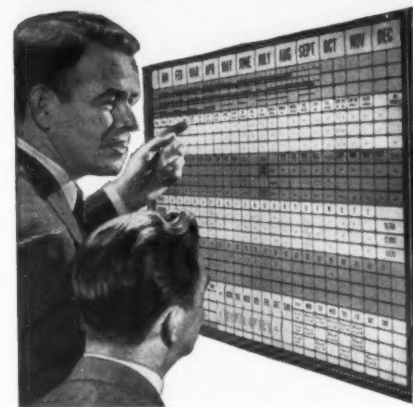
Each member of my staff is asked to contribute any material he considers pertinent. These contributions make up another portion of the letter and cover such items as industrial relations, purchasing, public relations, engineering, etc. For example, the industrial relations manager may report the signing of a labor contract at one of the plants; he would detail the basic terms of the agreement. The purchasing section may include comments that prices appear to be going up or down and that appropriate action should be taken. Finally, the letter includes all major personnel changes that have taken place during the month.

Management newsletter important

Our *Management Newsletter* discusses current and anticipated operations with a wider group of people throughout the company. This newsletter is published quarterly and sent by me to about 450 management personnel ranging from the chairman of the board to plant foreman. The pattern and contents of the newsletter are similar to the *President's Letter*, beginning with an analysis of the operations during the quarter just completed. It discusses anticipated business and the need for certain action in the various operations affected by sales forecasts.

In the next section, a complete analysis of plant budgets are expressed

You Get Things Done With Boardmaster Visual Control



- ☆ Gives Graphic Picture of Your Operations—Spotlighted by Color
- ☆ Facts at a glance—Saves Time, Saves Money, Prevents Errors
- ☆ Simple to operate—Type or Write on Cards, Snap in Grooves
- ☆ Ideal for Production, Traffic, Inventory, Scheduling, Sales, Etc.
- ☆ Made of Metal. Compact and Attractive. Over 50,000 in Use

Complete price **\$49.50** including cards

FREE

24-Page BOOKLET NO. M-200
Without Obligation

Write for Your Copy Today

GRAPHIC SYSTEMS

55 West 42nd Street • New York 36, N. Y.

(Circle 529 for more information)



**RECORD
STORAGE
a problem?**

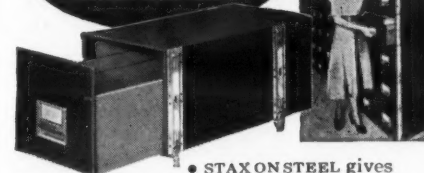


Solve it
with—

- Low-Cost
- Convenient
- Space-saving

STAXON STEEL
REG. U.S. PAT. OFF.
TRANSFER FILES

The only fibre-board
DRAWER FILE
that "builds its own steel
framework as you stack it"



● STAXON STEEL gives you easy-action drawers—quick access to records. Each corrugated fibre-board unit is complete with factory applied steel framework for sturdy support in rear and front. Interlock side-by-side and stack to the ceiling to save space. Letter size illustrated—\$4.70 per unit, slightly higher south and west.



Clip this ad to your letterhead
FOR FREE BOOKLET

- 1 Tells how long to keep records
- 2 Shows best record storage methods... plus name of your nearest dealer

BANKERS BOX COMPANY

720 S. Dearborn Street • Chicago 5, Ill.

(Circle 526 for more information)

GUIDE



TO TODAY'S Top Desk Values

If you want to get most desk per dollar — let "ID" be your guide! These two letters identify an Indiana Desk. And that means they verify top value. You can bank on getting the fullest measure of quality . . . in woods, workmanship, and all-around utility . . . in any of the many all-purpose models. "ID" makes it easy to make the right choice!



Right now, is a good time to see your nearest Indiana Desk dealer—or to write us for his name.

Member Wood Office Furniture Institute

indiana desk co.
JASPER, INDIANA • U.S.A.

(Circle 510 for more information)

Top Management

This message will be helpful to the 1 management person out of 1000 who is really interested in increasing profits by reducing office costs.

You have many ways to find out what is good about office items you plan to buy, but what completely impartial objective source of information do you now have that evaluates the claims made for office items and tells you what they cannot do? We have the only low cost service which gives you this information.

Our IDEAS service helps 5 ways

(1) provides impartial product information; (2) helps you to improve and to guard your attitudes so you can profit from more worthwhile ideas; (3) helps you to improve your ability to obtain cooperation from your associates; (4) helps you to recognize and to eliminate wasted effort; (5) instructs you in how-to-find worthwhile ideas and business data.

It digests the best proven ideas for reducing paper and desk work and reports results of original research conducted by our own organization and which is not available elsewhere.

This service is cumulatively indexed so it can be used when needed to solve a problem—it is not intended to be merely read.

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(Circle 542 for more information)

showing ratio of actual costs to budget on factors such as shipments, cost of sales, general and administrative expenses, and plant operating profit, including comment about budget performance of the various plants and sales operations.

Another section called "Management Tips" is, in effect, a management suggestion system. Recipients send in items they feel may be beneficial to sales or plant operating personnel.

Yearly General Managers meeting

Once a year, in late February or early March, a General Managers meeting is held. The timing is dependent upon the availability of year-end summary data from the Accounting Department. The main meeting generally starts on a Monday and continues through Wednesday. On Thursday, our two main divisions—Meter & Valve and Power Tools—branch off into special meetings of their own that last through Saturday. In these latter meetings, regional sales heads and plant managers discuss current operating problems of their particular division. All staff members of the Pittsburgh home office are asked to participate informally in discussions.

A typical agenda for the meeting starts with my comprehensive financial analysis of five-year past and future operations, two-year balance sheets, plant inventories, etc. During this analysis, General Managers are invited to make interruptions for clarification of subjects which may not be understandable. Next, general business outlook for the company and the industries we serve are discussed; more specific data about each division and each plant follow. Then, these subjects follow: industrial engineer's part in cost reduction; industrial relations; research and engineering; inventories and purchasing; advertising, community relations; insurance and credit; a summary of the meeting; and a quiz and review.

The last subject, quiz and review, has not only proven to be a light spot at the end of the three-day meeting, but also an excellent employee relations tactic that has built up friendly rivalry within the company to see who

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can do best. The quiz is made up by each speaker during the meeting who submits two or three questions and answers to a committee. From these, 20 or 30 "true or false" questions are used. The use of notes, taken during the meeting, are allowed and everybody participates including myself.

Other tools of communication

Another method for disseminating information across divisional and product lines is through the medium known as the "Hour of Enlightenment." Assignments are made to various members of the organization to program a session that runs an hour at the end of a working day. They are given three to six months to prepare. The purpose of the program is to "enlighten" an audience of from 75 to 100 management and department head levels. One successful "Hour of Enlightenment" was conducted by Delta Power Tool's "Homcraft" product manager, who gave actual demonstrations on the use of each tool in the home workshop line. Another interesting session was conducted by our controller, who explained in considerable detail how to read our balance sheet and profit-and-loss statement. In the treatment of general management subjects, as well as specific products or divisions, emphasis is placed on capturing and holding the interest of the listener. The "Hour of Enlightenment" is informative—but it's entertaining too, and that accounts for much of its success.

Few companies of any size fail to have their plant newspapers, bulletin boards, and meetings at all levels. We probably use more media and devices than most, because we believe that communications, like any consumer product, must be merchandised. The consumer—in this case the outlying plant manager who must at once and the same time be taught self-reliance and company-wide cooperation—prefers an attractive package. The man whose principal energies are devoted to selling valves will be more receptive to information on power tools if it's presented in an interesting and entertaining manner. Otherwise, giving each of the management-department

head group a catalog would suffice.

The first fundamental difference in our communications program is that we "merchandise" our message. A second difference is in the *contents* of the package, and this is a basic difference, rather than merely a difference in degree. Our approach in the disclosure of information to our general managers and department heads is one of complete frankness. They are the recipients of all financial and operating data that affect the company, broken down in considerable detail. And perhaps more important, they are constantly updated on management's thinking and planning in the light of changing business conditions. That the method is "paying off" is indicated by at least three significant results:

1. Our organization, composed of men with diverse backgrounds from the standpoint of markets, product and "employer origin" (since the end of World War II, we have purchased ten companies) is today a highly cohesive unit. Its personnel work well together, understand and appreciate the problems of the several divisions, and have an unusually high degree of what can be classified as "company spirit."
2. Diversification seems to be fulfilling its original purpose: security of earnings, jobs, and dividends. The percentage of earnings on sales is, and has been, relatively high. The fact that, in the first six months of 1954, earnings remained stable on somewhat reduced sales indicates that operating personnel appreciated fully the necessity for economies and contributed as well to cost-cutting procedures.

3. We are seldom forced to go outside our organization for men to fill positions at the department head or executive levels. When we "hire from the outside," it's generally because we feel that an influx of "new blood" will be helpful to the organization. The acquisition of an especially large and diverse group of companies during the past eight years has not depleted management ranks—nor put the company in a position of not having a capable and experienced man to assume a new responsibility when it arose. There have always been men ready to move up to fill in the newly created vacancies down the line. m/m

methods

form design

by John H. Ransom
Systems Development Mgr., Moore Business Forms, Inc.

Unit accounting streamlines accounts receivable

Here's how a firm specializing in forms streamlined their own accounts receivable system

Our Eastern division operates and controls, from our central administrative offices in Niagara Falls, the activities of five manufacturing plants. Two of the plants are in Niagara Falls and the other three are located at Elmira, New York, Thurmont and Snow Hill, Maryland. Each plant does its own invoicing for all orders it produces. Accounts receivable, however, is handled in the central administrative offices in Niagara Falls. Improvements in the old unit accounting methods led to a new, simple system.

How billing operations work

Customers' invoices are prepared in the various plants. The invoice is normally a seven-part form, but outlying plants use an eight-part invoice. Both fanfold construction and continuous interleaved construction are used for the invoices. The fanfold invoices are written continuously on electric fanfold writing machines. The continuous interleaved invoices are equally as effective and are used with typewriters in many of the plants. Except for construction, both forms are identical in layout and use of parts.

Part 1 (Original) and Part 2 (Duplicate) are sent to the customer. Part 3 (Accounts Receivable Copy), Part 4 (Cash Book Copy), and Part 5 (Statement Copy) are kept in one unit called "Accounts Receivable Unit" and delivered daily to the Tabulating Department with an adding machine tape of total dollars and cents. Part 6 (Salesman's Copy) is mailed to the salesman. Part 7 (Folder Copy) is filed with the production docket. Part 8 (Day Book Copy), which is used for outlying

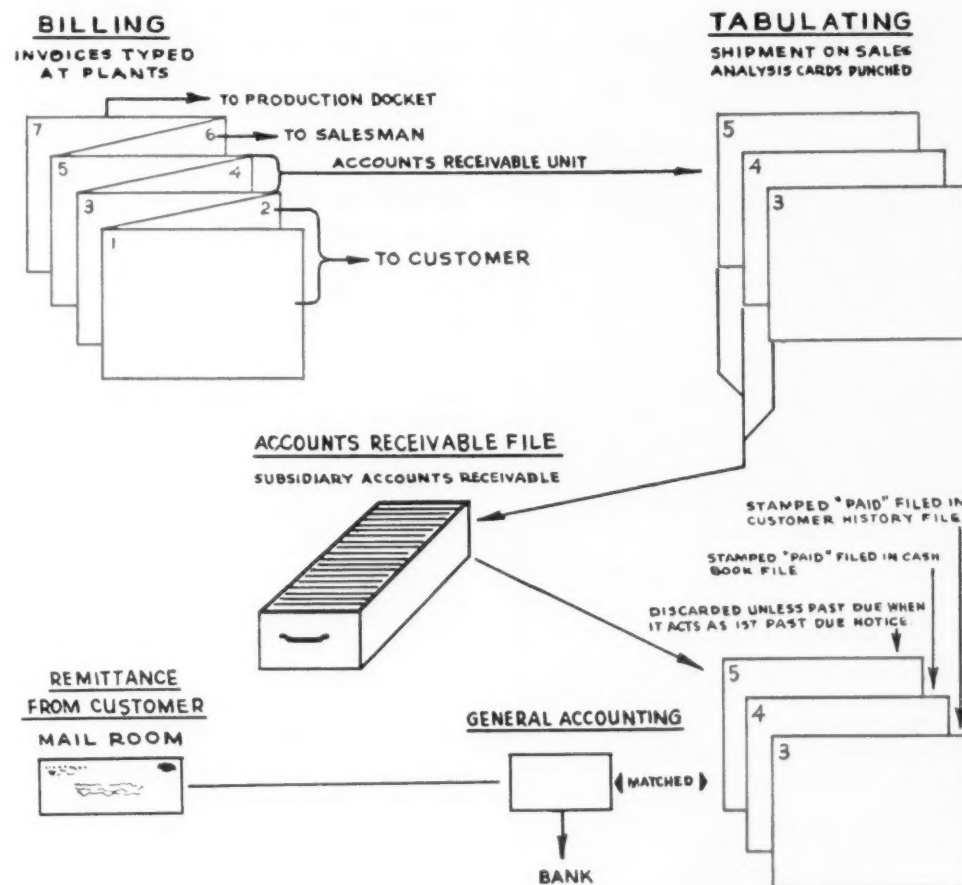
plants only, is filed by the plant by date so that a day's billing can be reconstructed if the Accounts Receivable Units sent to Niagara Falls happen to go astray in the mail.

After receiving the Accounts Receivable Units from the Invoicing Departments, the Tabulating Department punches shipment cards which are later used for tax records, analysis of product sales, clearance of in-process inventories, etc. Upon completion of punch-

ing, the Accounts Receivable Units are sent to the General Accounting Dept.

Charges to accounts receivable

The Accounts Receivable Units are sorted each day into 19 separate alphabetical control sections. The charges to each control are added and the totals are manually posted to a master control sheet, which is simply a ledger for total debits and credits to each control. The grand total of the debits to all



FLOW CHART OF UNIT ACCOUNTS RECEIVABLE

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Less than 4¢ each



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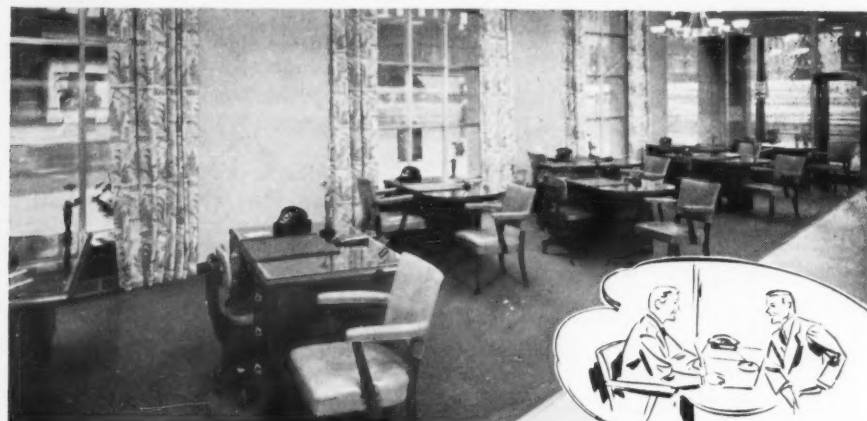


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stability of Mastercrafted construction . . . the gracious warmth of naturally beautiful woods . . . make your Jackson Desk Dealer the man to see for real old-fashioned values in up-to-date desks!

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OFFICE FURNITURE HOUSE,
Chicago



JASPER OFFICE FURNITURE CO.
JASPER, INDIANA, U. S. A.

(Circle 512 for more information)



controls must agree with the tape total received from the Invoicing Depts.

Accounts Receivable Units are then filed alphabetically. This file of invoices constitutes, in itself, the subsidiary accounts receivable ledger and eliminates all detailed posting of daily shipments to subsidiary ledgers. It is here that the unit accounting method accomplishes extremely large clerical savings while at the same time assuring accuracy. Posting of charges for some 80,000 to 90,000 active accounts into subsidiary ledgers is completely eliminated. The same economies arise when clearing the charges out by applying cash remittances.

Remittances, credits, adjustments

Customers' remittances are opened in the mail room and checks are sent to the General Accounting Department where they are sorted into the 19 alphabetical control sections. Checks are then applied to the open file of invoices (Accounts Receivable Units). If the invoice is paid in full the Accounts Receivable Unit leaves the file.

Part 3 of the invoice is stamped "Paid" and is put into the customer history file, alphabetically, where it will later serve also as a source of credit information and as a repeat order reference. Part 4 (Cash Book Copy) is stamped "Paid" and put into the cash received file, which is a chronological and alphabetical monthly record of cash receipts. It is used to facilitate the taking of the trial balance at the month end and is retained only until the next audit period. Part 5 is not used in the case of full payment within 30 days.

If the invoice is paid only partially a remittance advice is made out in duplicate. Payment information is posted to parts 3 and 4 of the Accounts Receivable Unit, as provided for in the upper half of these parts. The Accounts Receivable Unit, showing the unpaid balance, is then returned to the open file. The first copy of the remittance advice is sent to the Collection Department for follow-up and correspondence. The second copy is filed in the cash received file (the same file as part 4 when paid in full).

If a payment is received for which there is no open charge in the files to

apply against, the check is routed to the Credit Collection Dept. for tracing.

When cash is applied, checks are sent to the bank for deposit in the same groups as the Accounts Receivable control sections. Total cash received for each control is posted to the master control sheet.

Other adjustments to Accounts Receivable are accomplished by regular credit memos and journal vouchers. These documents are treated similarly to invoices and remittances with regard to filing and control.

At least once each week every control group in the open files of invoices is reviewed by the Credit Collection Department for past due charges, as well as for other irregularities. This is an automatic audit on the accounts and postings to date. Flagging systems may also be used for this review function in certain types of installations.

When an invoice is just past due, Copy 5 of the Invoice (Accounts Receivable Unit) is sent to the customer as the first past due notice. A notation of the action is made in the section provided on copies 3 and 4 which are returned to the open file. All further letters to the customer, either routine or special correspondence, are noted on the bottom section of copies 3 and 4. In this way a complete history of payments and correspondence is presented directly on the invoice copy itself.

Regular monthly statements are not sent out unless specifically requested, in which case an "open items" statement is typed. An insignificant percentage of customers request statements.

A trial balance is taken monthly. It consists simply of adding machine tapes of the various controls. The total in the open files must agree with the balance on the master control sheet. All charge and credit transactions are held up until the trial balance is made so that balancing is facilitated.

Internal control

Loss of an open invoice (Accounts Receivable Unit) is commonly regarded as the most serious danger in unit accounting, but since inception of this system there has been no serious difficulty with lost or misfiled units. Even if one did become lost, the trial balance would show it up clearly and

methods

by working back to the previous month's balance it could readily be identified. Further, when a customer paid his bill the correspondence used to trace down the unapplied cash would reveal the loss.

Other precautions are found in the segregation or allocation of responsibility over the various controls. Handling of the 19 alphabetical controls is divided among four people in the General Accounting Department and six in the Credit Collection Department. Thus, one acts as a double check upon the other. Furthermore, assignment of controls is rotated among the people in both departments.

The use of predetermined totals by adding machine tapes and control postings to the master control sheets result in an orderly, systematic, and tightly controlled system. Proof of the good control provided, plus other features, lies on the fact that both Certified Public Auditing firms and Moore's own internal auditing staff have encouraged the system.

Advantages are numerous

Some advantages of the system are:

Economy and Speed of Operation. No detailed postings to subsidiary ledgers for changes or credits are needed. Little heavy capital investment is necessary. Typing of first collection notice is eliminated. No monthly statement preparation is needed except when requested. Subsidiary ledger paper, cards, or sheets are unnecessary. It provides a fast monthly trial balance.

Accuracy. There are few posting errors since practically no posting is required. When applying cash, the necessity of relating remittances to specific charges immediately earmarks errors or wrong amounts and action can be taken at once to locate "discrepancies" among customer records, instead of spending hours in correspondence at a later date. Unit Accounting promotes "clean" balances, rather than a complex lumped-in balance brought forward which easily buries errors difficult to analyze.

Better Records. The customer historical file gives, at all times, immediate credit experience, sales activity and product information. The Cash Received file provides a more meaning-

ful and accurate cash journal. The Open Invoice file is readily available and easier to handle.

Internal Control. The inherent control features make this system one of the very safest.

Flexibility. The unlimited expansion in the number of accounts results in no hinderance to the system—it is practical for any size business and can easily be adapted to any type of business. Minor alterations can be made without disrupting the whole system.

In summarizing the features, it might be pointed out that one single invoice set provides the following:

1. Billing in duplicate to the customer.
2. A record for the salesman.
3. A charge to Accounts Receivable.
4. A collection medium.
5. An initial collection letter.
6. A permanent customer history file.
7. A record of customer's paying habits.
8. An audit and tax record.
9. Shipment or sales analysis.
10. The means of clearing in-process inventories.
11. Repeat order reference file. m/m

"worth

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"There is too much of a spread in the rates of compensation for office management today. I am sure you have seen want ads which specify a salary of as low as \$4,000 per annum and likewise there are many that range over \$15,000 per annum. The reasons for this wide range are the size of the office or business and the value to the organization of the person employed. But the greatest reason is the amount of executive ability applied and the authority given. Too often an organization does not mean what is said: they are looking for a producer, not a manager, and consequently, the salary offered is low. By the same token, an individual many times is only a producer and not a manager and so his income is based upon what he is worth." Alfred H. Dorstewitz, President, OMA of Chicago.

repeating"



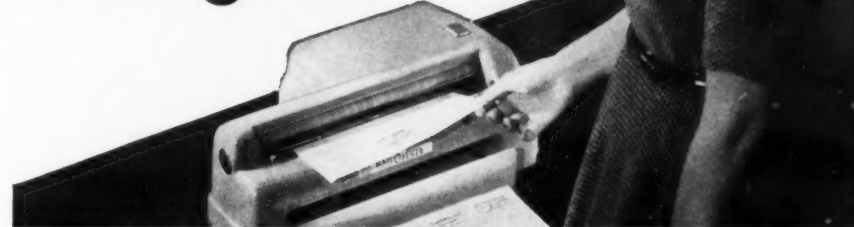
Morning handout!

In offices where the mail is opened by hand, highly paid sales and office workers lose valuable time every morning. A PB electric MailOpener speeds up the opening and distribution of mail, can often save an extra 5 or 10 minutes of each person's working time. Swiftly, safely takes a thread-like edge off each envelope, any size... any kind of paper.

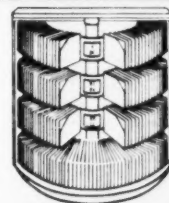
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(Circle 491 for more information)



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Secretary to Mr. D. M. Jacks
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(Circle 508 for more information)

FIRST ANNUAL best place to work AWARD WINNERS

A total of 184 separate entries were received in this year's competition. The winning entries are described and illustrated in the 1954 issue of THE INTEGRATED OFFICE. Honorable Mention Award winners will be published in subsequent issues of MANAGEMENT METHODS MAGAZINE (see opposite page).

Unlike most contests of this type, these Awards are not concerned with merely "beautiful" offices. They are designed to demonstrate how well-planned, well-integrated quarters improve both employee and executive productivity and morale.

Four general criteria were applied by the Judges in selecting winners in each category: space layout, workability, human relations factors, and decor. Each of the four Judges is a specialist in one of these fields.

1ST AWARDS

BEST INTEGRATED GENERAL OFFICES
Stauffer Chemical Company
(metropolitan location)
Schuckl & Company
(suburban location)

SPECIAL AWARDS

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Stauffer Chemical Company
BEST BOARD OR CONFERENCE ROOM
Columbian Carbon Company
BEST RECEPTION AREA
Standard Federal Savings and Loan Association
BEST "SPECIAL SITUATION" SOLUTION
Dow Chemical Company

HONORABLE MENTION AWARDS

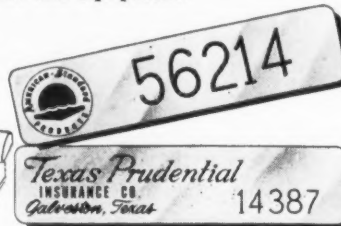
INTEGRATED GENERAL OFFICES
Columbian Carbon Company
Standard Federal Savings and Loan Association
EMPLOYEE LUNCH/LOUNGE AREA
Commercial Solvents Corporation
"SPECIAL SITUATION" SOLUTION
Chesapeake & Ohio Railway Company
Millstone Construction Company



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Autographs
"Tags that Perfect
Property Control"
say METHODS & SYSTEMS MEN

"Found! The vital link that perfects property control. One type of tag, one method of mounting, uniform "out-front" placement and legible numbers . . . outstanding attributes of this innovation in the "tagging" of furniture, fixtures and equipment."

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WRITE TODAY
for FREE booklet, "HOW TO
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NO SCREWS, RIVETS OR TOOLS

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GRAPHS" are produced from lustrous
.016" Satin Aluminum. They're much
more durable than foil or paper labels
. . . more impressive and easier to
mount than conventional "tags."
Mount them in seconds on both
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Simply brush solvent on the adhesive
backing and press into place with
your fingertips.

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(Circle 479 for more information)

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**A new, enamel-
type coating,
when applied to
floors, walls or
machinery, will
dry to the touch
in 20 minutes.**

This product can be applied to wood, concrete, terrazzo, magnesite and mosaic tile floors and walls, or, with proper primer, to metal. It dries to a very tough, wax-like gloss. The finish is unaffected by cleaning compounds, soaps and detergents and resistant to grease, oil, gasoline, alkali and salt water.

It is available in black, white, clear and five colors. The paint can be applied with a brush applicator or roller in either a glossy or "non-slip" formula. The cost averages 2 1/2¢ per sq. ft.

STEELCOTE Manufacturing Co.
3418 Gratiot, St. Louis 3, Missouri

(Circle 523 for more information)

work center

"... men and machines don't work in a vacuum.

Though you may saturate your Work Stations with skilled workers and modern tools, they can produce efficiently only when 'community' factors like traffic control, and adequate lighting, and proper communications — and even creature comforts — are properly integrated."

"integrated office

best place to work award | honorable mention

This narrow 9'7" room accommodates the work station of Miss Betty Royon, Staff Assistant to Cyrus Eaton, Chairman of the Board of the Chesapeake & Ohio Railway Company. His activities are far afield, since they include the running of a number of companies. Therefore, the activities of his secretary are similarly diversified. Furthermore, all traffic to the Chairman of the Board must pass through this secretary's room.

The object of the layout was to create a work environment utterly functional and, at the same time, appropriate for an executive suite. Since

it was not possible or desirable to split the work load or the responsibilities of this secretary among two people, it had to be efficiently provided for.

The office was specifically designed to afford (1) multiple work areas for the concurrent handling of numerous assignments, (2) immediate availability of a large number of current files, and (3) instantaneous access to reference books, periodicals, and newspapers.

The "U" shown in the sketch was the answer. All regular work is done on the left side with the right portion of the "U" used for auxiliary and unusual jobs. Storage, of a very diversified

**solution to
"special situation"**

*Chesapeake & Ohio
Railway Company*

DESIGNER
*Korda Industries
New York*

nature, is on the right-hand side.

The walls of this room are covered with bleached mahogany paneling. The desk-top surfaces are tan desk linoleum. All other exposed surfaces and all sliding doors are matched walnut. A few spotlights are arranged on the ceiling along the "U" in addition to the general room illumination.

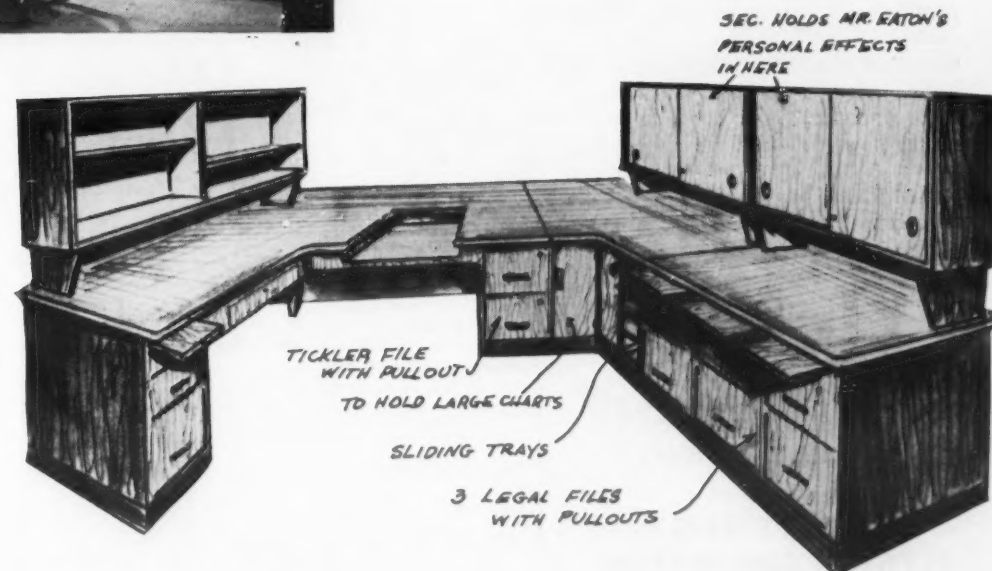
The equipment consists of three basic units: the L on the left, the storage-L in the right far corner, and the "triamese" legal-size file unit. There are a total of five pull-outs, strategically located. None of the equipment shown is attached to the walls. The inside of the cabinets, which have sliding doors, matches the tan of the work-tops.

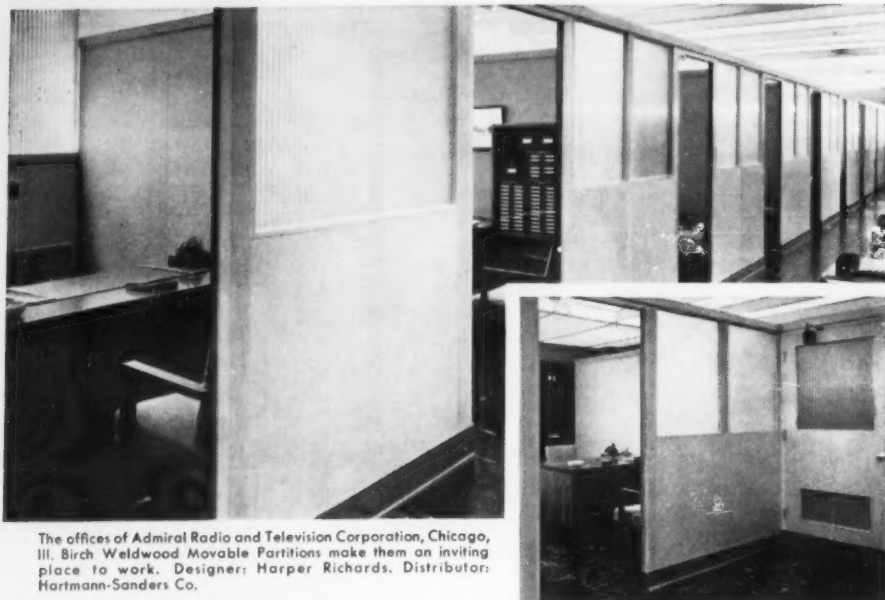
The open back of the L-desk on the left permits easy access to the many boxes necessary for the extensive communication provisions in the room. m/m



ABOVE: Miss Royon at her custom-designed work station.

RIGHT: Designer's rendering shows how the unit fulfills its many functions.





The offices of Admiral Radio and Television Corporation, Chicago, Ill. Birch Weldwood Movable Partitions make them an inviting place to work. Designer: Harper Richards. Distributor: Hartmann-Sanders Co.

Flush movable partitions with the beauty of real wood

Weldwood's simple interlocking feature makes rearrangement possible on a week end or overnight

There is nothing that matches the warmth and beauty of real hardwood partition panels. When this natural beauty is combined with low cost movability it's a combination that is hard to beat. Handsome birch is standard; any wood is available on order.

FOR OFFICES ON THE MOVE. Unique metal keys which lock the panels together make it a simple matter to rearrange them. There are no screws. Snap-on matching post cap between panels hides telephone and electric cables.

TYPES OF PANELS include cornice and ceiling height, glazed and low railings. Door and wall panels may be interchanged without disturbing adjoining panels. Available in standard sizes.

NOISE BARRIER. The panels contain the same fire-resistant mineral core

which is used in Weldwood Fire Doors, providing a noise barrier twice as effective as a 2 x 4 partition with metal lath, plastered both sides.

GUARANTEE: Weldwood Partition Panels are guaranteed for the life of the installation!

MAIL COUPON or call any of the 73 United States Plywood or U.S.-Mengel Plywoods showrooms, in principal cities.

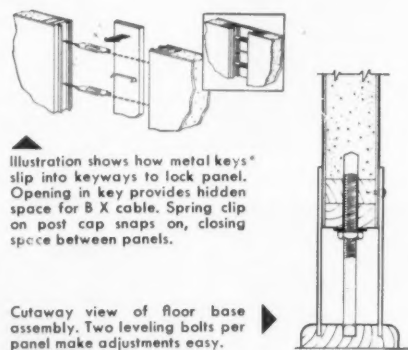


Illustration shows how metal keys* slip into keyways to lock panel. Opening in key provides hidden space for 8 X cable. Spring clip on post cap snaps on, closing space between panels.

Cutaway view of floor base assembly. Two leveling bolts per panel make adjustments easy.



Weldwood®
MOVABLE PARTITIONS

A product of

**UNITED STATES
PLYWOOD CORPORATION**

(Circle 501 for more information)

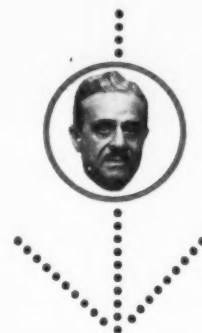
United States Plywood Corporation
Weldwood Building, 55 West 44th Street
New York 36, N. Y. MM-10-54

Please send me free literature on Weldwood Movable Partitions and names of nearest distributors. ☐ Literature on Weldwood Fire and Stay-Strate® Doors. ☐

Name.....

Address.....

City..... State.....



THE MAN

Raymond Loewy

THE COMPANY

Raymond Loewy
Associates



where they

THE OFFICES OF

MR. LOEWY'S OFFICE is located on the 22nd floor of a large New York City building. The company occupies the 22nd floor, with additional space on the 15th and 2nd floors. Since most of the area is devoted to drawing boards and work space, executive office space has been kept to a minimum. Mr. Loewy's office measures approximately 16 x 16, comparatively small for the head of an organization with more than 200 employees.

The office is shared by Miss Peters, Mr. Loewy's personal secretary, for two reasons: 1) because of the space factor, and 2) because Mr. Loewy prefers it that way.

Furnishings, lighting, and structural details were designed to create an airy, spacious feeling. Both desks, designed by Mr. Loewy, are really tables, completely open underneath. Miss Peters' desk has a single suspended drawer for current files, and adjacent to Mr. Loewy's desk is a small cabinet with shallow drawers for storing art material and drawing pencils. Additional

storage space is provided by hanging cabinets which are embedded into the west wall (projecting through to the adjacent office). The cabinets are 12" deep, but only extend into the room to a distance of 4". The ledge of these cabinets and the shelf above it are used to display Mr. Loewy's personal art objects. These can easily be cleared for business meetings and conferences to afford display of sketches or plans. Concealed below the chestnut wall cases is a row of fluorescent tubes. These dramatically illuminate the curved joining of wall and floor which increases the feeling of space. Wherever possible, right angles are removed, as in the mirror column, the curved corners of the dropped ceiling, and the corner window.

Lighting keyed to work tempo

Good working light is provided by a suspended adjustable lamp over Mr. Loewy's desk and a perforated brass lamp on Miss Peters' desk. Suspended spotlights are angled to illuminate the

work

S U C C E S S F U L M E N



west wall and similar fixtures are attached to the frosted mirror columns in order to cast indirect light up at the white ceiling.

Around the edge of the dropped ceiling, on the window sides, is a continuous row of incandescent flood lights with alternating color filters mounted on the face. A control board behind Mr. Loewy's desk allows him to flood the blinds and windows with red, blue, green, or amber light, or any combination of these. Apparently whimsical, this technique is based on sound psychology. A flick of the switch and the complete mood and tempo of the office is changed.

The office as a whole is not an attempt to sell industrial design. Everything is in excellent taste, of excellent design, and diversified—which reflects Mr. Loewy as an individual who believes in selecting the best from all sources available and integrating them in an area to make it efficient to work in, easy to maintain, stimulating, comfortable, and distinctly personal. m/m

october 1954

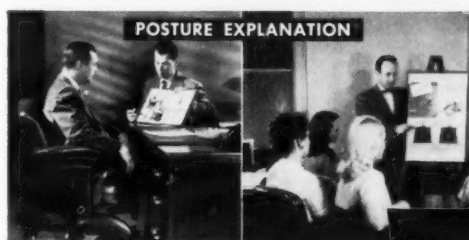
R

WHAT IS THE

formula

FOR PROFITABLE

POSTURE?



1 Your Do/More representative explains the "why" and "how" of proper seated posture. Without this important explanation, no employee will be interested in better posture.

3 Chair is anatomically fitted by an expert according to the user's job, height, weight and physical proportions. This enables employees to feel their best, work their best.



It isn't the chair alone, it isn't the employee alone...

nor is it the chair and the employee together.

The formula for profitable posture has other ingredients, as proven by Do/More during the past quarter-century.

This time-proven formula, as explained below, is known as the "Do/More Posture 4 Program."

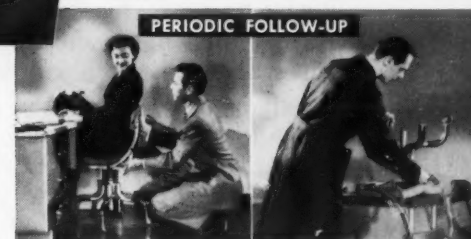
Among all chair manufacturers, Do/More alone performs each of the vital steps necessary for profitable posture.

That's why companies who are interested in greater employee health and comfort, and in lowered office costs, have standardized with Do/More chairs throughout.



2 The right chair is recommended after careful analysis of both the job and the individual's requirements. All Do/More chairs have exclusive design features.

4 Call-backs are made to check on the user's posture progress and for inspection of the chair itself. Only Do/More provides this important follow-up service.



DO/MORE®
POSTURE
4
PROGRAM

PROOF:

Prove to your own satisfaction that nothing less than this complete program promises the benefit of profitable posture... yet costs no more!

SEND COUPON TO GET THE FACTS FOR YOUR OFFICE!
DOMORE CHAIR COMPANY, INC. Dept. 1061, Elkhart, Indiana

We have _____ employees in our office. Please tell me what the "Do/More Posture 4 Program" can do to cut our costs and increase employee output.

NAME _____

COMPANY _____

ADDRESS _____

CITY, _____ STATE _____

(Circle 467 for more information)



P-A-X

moves mountains of work!

Paperwork moves at double speed when your organization is equipped with a P-A-X Business Telephone System. That's because, with P-A-X, the facts are only seconds away!

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Everyone saves time and energy—cuts confusion and errors. Routines hum along smoothly, and emergencies can be dealt with quickly when P-A-X unites the efforts of an entire organization.

Thousands of companies have found that P-A-X telephones speed up work flow and hold down overhead. To get the facts, write or call: Automatic Electric Sales Corporation (HAYmarket 1-4300), 1033 West Van Buren Street, Chicago 7, Illinois.



FOR EXECUTIVE CONVENIENCE—

A special "Executive Direct-Line" unit, which gives two-way loudspeaker conversation at the flick of a switch, can be supplied with any P-A-X. Illustrated circular sent on request.



P-A-X

business
telephone
systems

AUTOMATIC ELECTRIC

(Circle 455 for more information)



Ceiling serves 7 major

A new ceiling meets the growing trend toward maximum flexibility

Modern trends in office planning are creating many physical layout handicaps which were uncommon a decade ago. The parallel trends of mechanization for greater productivity and space layout flexibility, are often at odds. Such things as air conditioning ducts, water cooler piping, and electrical services often tend to interfere with movable walls and other means of achieving maximum space flexibility.

An open section of the ceiling showing the power and service lines, and acoustical insulation



An outstanding example of the proper integration of these opposing trends can be found in the new engineering building of Douglas Aircraft Company's El Segundo division. A minimum of 75 square feet of working space is provided for each worker. Structure, designed by Kistner, Wright and Wright, houses 1500 engineers, draftsmen, and aides in a two-story steel and concrete building 210' x 330'. By integrating seven major power and service supply sources in the ceiling, the architects were able to make optimum use of all floor space.

The ceiling provides: 1) fully diffused lighting of 90-100 foot-candles, 2) acoustical equipment for noise control, 3) power distribution for electrical office equipment, 4) telephone cables, 5) public address system, 6) air conditioning system, and 7) sprinkler control system.

Standard white fluorescent lamps mounted on 36" centers maintain 90-100 foot-candles of light intensity. Since visual performance and comfort are affected by brightness (which is measured in foot-lamberts, not foot-candles),



functions

num flexibility in office arrangements

the maximum brightness of the corrugated plastic diffusers suspended below the lamps is only 150 foot-lamberts. The acoustical baffles suspended below the diffusers furnish additional shielding. Personnel faces perpendicular to these baffles, whose maximum brightness is only 50 to 60 foot-lamberts. Windows are of tinted glass; those facing south are shielded to reduce brightness. A co-ordinated seeing-environment results in which the unusually high intensity is comfortable because the light quality is controlled.

The acoustical baffles are of light perforated metal with fibre glass cores. They are also on 36" centers with cross baffling every 30 feet. Their effectiveness is such that persons working 20' apart are hardly conscious of other voices.

Air distribution outlets in the ceiling provide cool or warm air and exhaust. The system provides a complete change of air every 5 minutes.

Power for 150 electric typewriters, 75 calculators, photographic and other electrical equipment comes from wire mold mounted on the bottom of the

less lag here...



Art Metal Speed-File drawers are full height, with guide rods. They use standard-size index guides, permitting direct transfer of contents from ordinary files.

less drag here



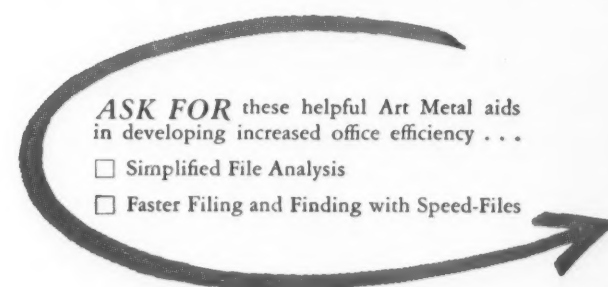
... cuts down needless office delays

The simplicity of single-action operation introduced by Art Metal in the Speed-File effects savings you can multiply at every desk where papers are needed for reference.

World's fastest files to use, Speed-Files save a full third of filing labor through Art Metal's ingenious drawer construction and indexing. Papers arrive faster where they are wanted. Misfiling, which leads to costly delays, is minimized. Work gets done throughout the office with less fuss, less delay, more speed.

Art Metal's 66 years of file improvement service will pay you further dividends in reduced floor space requirements... actually a 40% saving when you use 5-drawer Speed-Files in place of conventional 4-drawer files.

Why not let Art Metal equipment and experience in office planning help you achieve maximum efficiency in office paper handling? Your local Art Metal dealer is listed in the Yellow Section under Office Equipment. Or write Art Metal Construction Co., Jamestown, 4, N. Y.



© A. M. C. CO. - 1954



For 66 years the hallmark of the finest in office equipment and systems.

(Circle 454 for more information)

Management **methods** announces

publication of the 2nd issue of the integrated office

a handbook for management on
office remodeling, relocating, building



If you have been thinking about remodeling, moving, enlarging your offices, here's a practical, down-to-earth guide that will save you hours of trial and error planning. This year's issue is crammed full of solutions to management's most pressing problems:

How to select new quarters

How much does it cost to move

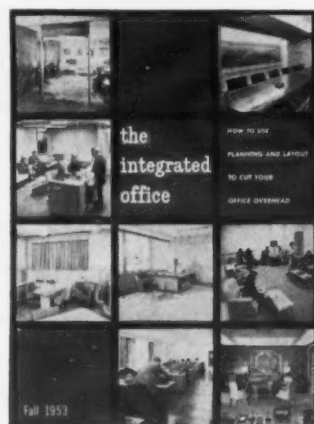
How to modernize on a long-term plan

How much does it cost to redecorate

How to handle sale and lease-back of property

How to expand an existing building

Each of these questions—and this is only a *partial* table of contents—is written by a recognized expert in terms of his experience with well-known firms. Dozens of photographs and plans guide your selection to the proper solution to your needs. To order, use the postage-paid order card bound into this issue. We'll bill you later. **only \$2.00**



A FEW COPIES OF THE 1953 ISSUE STILL AVAILABLE

The 1953 edition of THE INTEGRATED OFFICE covered completely different subject matter. Its general theme was a detailed breakdown of the factors involved in office layout and planning. Together, the two issues provide a complete "package" for the business concerned with office layout, building, furnishing, and renovation. While they last, 1953 copies are available at \$2.00. Use the special order card bound in this issue of MANAGEMENT METHODS.

acoustical baffles; distribution wires drop down to the work area.

The telephone cables run along the sides of the baffles and drop to the desks. Because it is a principle of vision that we see by contrast and because the brightness of the dropped power and telephone wires and the surroundings are so near to each other, the wires blend into the background. A complete sprinkler system is hidden above the ceiling as well as a 100-loud-speaker paging system.

A base undercoat and speckled green and pink overlay give color changes from different positions in the room. The attention given to these factors which affect personnel so directly is credited with having produced a large volume of useful design work with less engineering personnel than is average in the industry. m/m

**plan-
ning
idea**

**Isolating
a noisy
operation**

Acoustical cabinets can provide work stations with *sound* privacy regardless of where they may be located. A noisy machine station, in the midst of an open area office, can be sound-conditioned so that the entire office is not disturbed by the single operation.

The harsh metallic pitch from noise is absorbed at its source by the cabinet. The new remaining sound level is reduced 50% at the front of the cabinet, and considerably more at the sides and behind it. This is important in both a single work station, as well as in a tabulating machine room. The metallic pitch of noise is its harmful ingredient. By its removal, noise becomes sound. This removal, plus the reduction of

Sound-proofing individual work stations in a tabulating machine room using acoustical cabinets.



Meet a Big Backer from Sturgis



... a new chair with a bigger, higher back

If you're a man who likes a generous-sized backrest to support you in solid comfort through the day, this new Sturgis 1400-G chair is your dish. That backrest, sir, is a cool 16½ x 13¼ inches of cushioned comfort. Put your back into it, swivel, tilt—and learn what relaxing is!

Wonderfully buoyant full cushioned coil spring seat too. And under it all is the famous fiber glass base that *never* gets unsightly, *never* needs to be refinished. How about asking your Sturgis dealer for a demonstration of this surprisingly moderately priced chair?



POSTURE CHAIRS

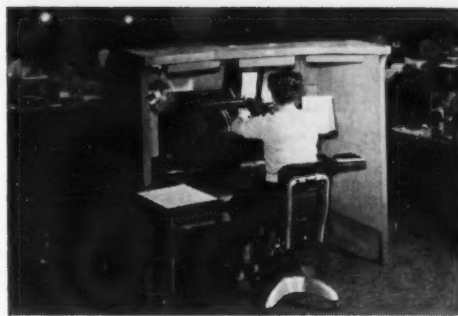
Manufactured in Sturgis, Mich. and Charleston, S. C.
The Sturgis Posture Chair Company, Sturgis, Michigan

THE STURGIS POSTURE CHAIR COMPANY
General Sales Offices, 154 E. Erie St., Chicago 11, Illinois

We'd like a copy of your illustrated
folder describing this and other chairs.

Name _____
Firm Name _____
Address _____
City _____ State _____
(Circle 496 for more information)

october 1954



Isolating a noisy machine operation in the midst of an open area office without disturbing anyone.

sound, permits personnel to converse in normal voice levels, and eliminates possible interference with personnel concentration.

Over-fatigue, frequent headaches, and nervous tension and irritability are direct effects of noise, according to many surveys. With a reduction in noise, there is a corresponding increase in productivity, and a decrease in these nervous ailments.

Improper lighting can also add to fatigue. At a machine operation, a high-degree glareless light is optimum. By providing fluorescent lighting as part of the cabinet, vibrationless and uniformly balanced light is reflected in the entire work station.

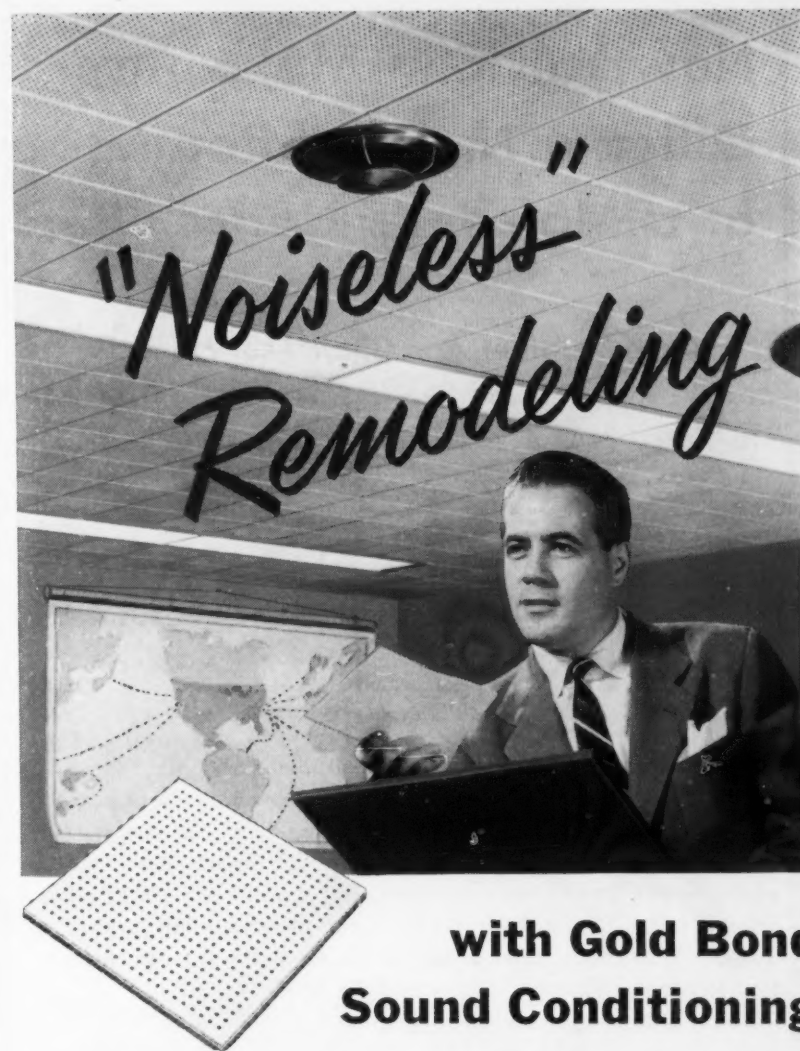
A survey was made of 1000 machine operators *prior to* and following the installation of cabinets. Two of the standard questions related to the incidence of headaches and irritability. Approximately 60% admitted to constant headaches, and all admitted to nervous irritability. After installation of acoustical cabinets, neither of these conditions were found to be *prevalent* among operators.

For more information about acoustical cabinets, circle number 575 on the Reader Service Card.

plan-
ning
idea

Penthouse automatic
cafeteria offers
service, glamour

Something new in the way of automatic cafeterias can be found in the new employee lunchroom at the Railway Express Agency's New York office. The new dining room combines the convenience and low cost of food vending machines with the glamour of a



with Gold Bond Sound Conditioning

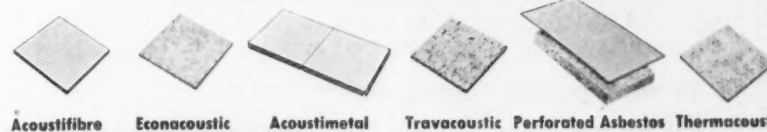
YOUR remodeling money can do *twice* the job it's meant to do... *sound condition* as well as *add new good looks*... with a Gold Bond Acoustifibre ceiling. And the cost is little or no more than that of remodeling *without* the extra benefit of quiet!

Gold Bond Acoustifibre adds fresh, bright appearance to any room while it absorbs annoying, distracting sounds. The highly light-reflective tile surfaces are washable—and may be painted

without affecting acoustical qualities.

Let your Gold Bond Acoustical Contractor help you plan your remodeling. He'll show you the *full* line of Gold Bond Acoustical Products and recommend the one that best fits your requirements. Look in the Yellow Pages of your phone book under "Acoustical Contractors" or mail this coupon today! National Gypsum Company, 325 Delaware Avenue, Buffalo 2, New York.

Gold Bond—America's COMPLETE Line of Sound Conditioning Materials



Get sound comfort
with **Gold Bond**
ACOUSTICAL PRODUCTS

NATIONAL GYPSUM CO., Dept. MM-104, Buffalo 2, N.Y.

Please send me without obligation:

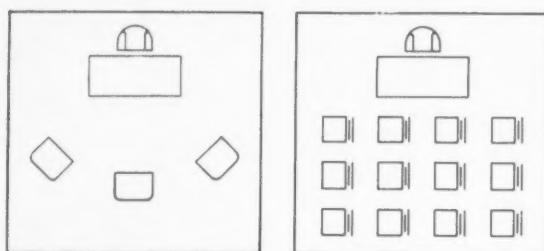
- ☐ Free copy of "The Decibel"—12-page booklet picturing successful sound-conditioning jobs.
☐ Name of the nearest Gold Bond Acoustical Contractor.

Name _____
Address _____
City _____ County _____ State _____

(Circle 486 for more information)

Now You Can Make Any Office a Meeting Room at a Moment's Notice

Clarín's Tablet Arm Chair That Folds More Than Doubles Seating and Table Space



These office diagrams give a simple example of how the Clarín Tablet Arm Chair That Folds can solve any number of emergency seating problems at a moment's notice. Conferences—sales meetings—lectures where note-taking is desirable—board meetings—staff meetings—any type of group meeting—they all cease to be a problem when you have this splendid, dual-purpose Tablet Arm Chair That Folds. It is ideal for dual-purpose lounge rooms, personnel offices and the like.

Here is a truly remarkable engineering achievement in a folding chair. It folds and unfolds in seconds—gives both seating and table space—and stacks safely in a minimum space, for its folded depth is only 3".

It is literally true that you can more than double your seating and table space in no time at all. Above all the chair is supremely comfortable, being posture designed, and can be obtained in colors to match any decorating scheme.

FILLS A LONG FELT NEED

For: Industrial Plants
Insurance Companies
Schools and Colleges
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Hospitals
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For full details and specifications, write:

Clarín Mfg. Co., Dept. 47, 4640 W. Harrison St., Chicago 44, Ill.

Clarín

ENGINEERED QUALITY

MAKES THE BIG DIFFERENCE IN FOLDING CHAIRS

(Circle 459 for more information)

penthouse dining club.

The dining area consists of a "penthouse" built on top of the building with an adjoining terrace. The indoor area is 50' x 54' and accommodates 100 people. Floor-to-ceiling louvre type windows along two walls provide natural light and keep the place comfortably cool during warm weather. A blower-heating system is in operation during the winter months. The interior is decorated in soft greens, with a white



ABOVE: Employees enjoy their lunch outdoors against the New York skyline. **BELOW:** Assortment of vending machines provide ample supply of food. Machines are spaced to avoid crowding.



acoustical tile ceiling. The atmosphere is further enhanced by a commercially wired music service.

Immediately adjoining the indoor dining room is a terrace extension. This area is equipped with gaily decorated sun-umbrella table combinations, and sundeck aluminum chairs. These accommodate another 50 diners.

The lunchroom provides facilities for the 1200 clerical employees through a system of informally staggered lunch periods. Prices are substantially lower than those of restaurants in the adjacent area. A total of thirteen vending machines dispense a variety of hot and cold food: sandwiches, soups, coffee, tea, milk, fruit juices, pies, ice cream, cookies, cakes, candy, and cigarettes. As an added convenience, the canteen service, which operates the machine installation, provides a "free lunch" table stocked with cole slaw, relishes, condiments, etc.

Management has found that a major-

ity of employees make use of the facilities, and that it has proven to be a decided morale booster.

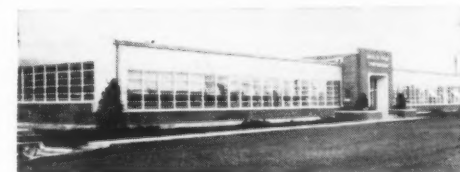
**plan-
ning
idea**

**Metal panels for
exterior, interior
construction**

In the construction of their new building, the Buckeye Tool Company of Dayton, Ohio, chose insulated steel wall panels for both interior and exterior use. The steel panels are quickly and easily erected in much less time than required for masonry construction and at a greater savings and costs of labor and material.

The exterior of the building was a combination of brick and shallow-fluted panels, inset with a continuous row of windows completely encircling the building. The interior walls contain flush, prime-painted, aluminum panels.

The panels contain 3" of fiber glass insulation, installed at the factory, and designed to insure a minimum of heat-loss as well as acoustical benefits. A continuous wall is created by interlocking, with weatherproof joints, which resist loads applied from any direction. Panels are attached to the structural framing with either rivets or sheet



ABOVE: Brick and metal panels blend for exterior use. **BELOW:** Metal panels offer temperature and noise control inside the general offices.



methods

metal screws. They can be removed for relocation without damage.

The Buckeye Tool Company used some 6,000 square feet of paneling. Costs of a similar wall in conventional masonry construction "8-inch or 9-inch wall" would have cost 20% more than the insulated panel construction.

For more information, circle number 579 on the Reader Service Card.

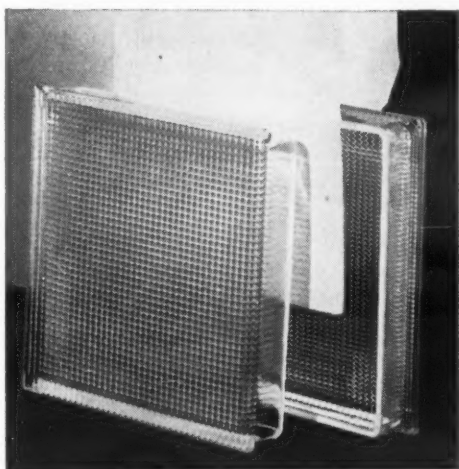
**plan-
ning
idea**

**Tinted glass blocks
reduce glare, cut
costs, increase light**

A new series of glass blocks reduce glare and solar heat gain. These blocks are expressly designed to solve high brightness problems resulting from sun and snow. They contain a pale green, fibrous glass diffusing screen, that reduces surface brightness or glare by 35% and sudden heat gain by 25%.

The choice of green as the color of the screen was based on psychological research on human reaction to various colors. It was found that light coming through the blocks on sunny exposures makes rooms seem definitely cooler and more comfortable.

These blocks are available in three light-directing patterns. One throws



light upward toward the ceiling, another diffuses light in all directions, and the third is for use in toplighting over wide floor areas.

These glass block panels reduce heating and cooling costs because of their insulating efficiency rating. Maintenance costs are low, since painting is unnecessary and breakage is almost unknown. Dirt infiltration is im-

possible, since the glass is structurally a part of a solid wall. Outside noise is reduced by the internal dead air spaces in the blocks, which reduce sound transmission.

For more information, circle number 556 on the Reader Service Card.

**plan-
ning
idea**

**Partitions house
blackboard and
bulletin board**

Blackboard and bulletin board panels add increased utility to the flexibility of new movable office partition units. The new modular units are designed for use in editorial offices, small conference rooms, drafting and planning offices, and other areas where bulletin boards and the high visibility of blackboards are desirable.

The blackboard and bulletin board panels are interchangeable with panels of conventional clear or frosted glass,



thus making it possible to alter the character of an office within a few minutes. These new panels are also available separately in the manufacturer's existing installations.

For more information, circle number 565 on the Reader Service Card.

**plan-
ning
idea**

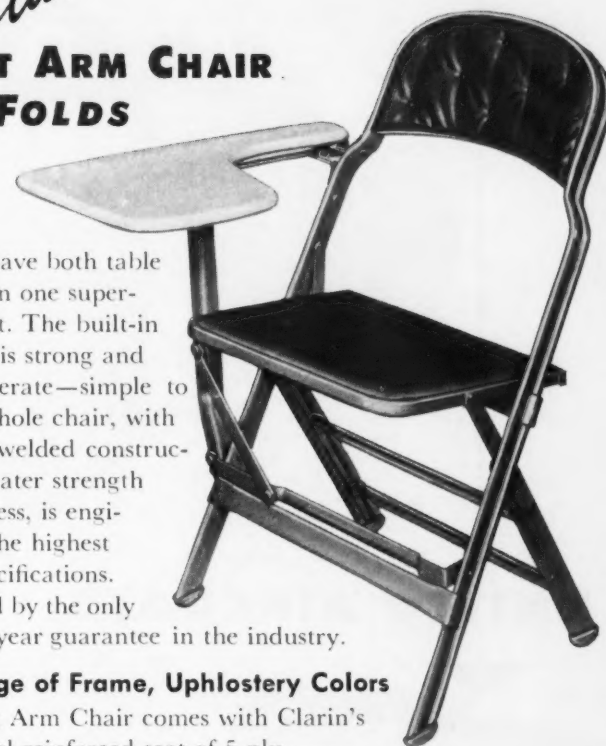
**New products
for work center
application**

**Illustrated booklet details
planning for laboratory space**

A new, free booklet examines and underlines certain basic conclusions relating

The Most Practical and Comfortable Dual-Purpose Folding Chair Ever Built

Clarín
**THE
TABLET ARM CHAIR
THAT FOLDS**

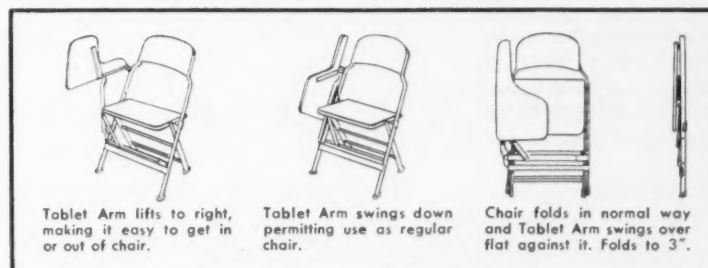


Here you have both table and chair in one super-quality unit. The built-in tablet arm is strong and easy to operate—simple to use. The whole chair, with its X-type welded construction for greater strength and quietness, is engineered to the highest quality specifications. It is backed by the only written 10-year guarantee in the industry.

Wide Range of Frame, Upholstery Colors

The Tablet Arm Chair comes with Clarín's unique, steel-reinforced seat of 5-ply plywood—or, with upholstered seat and back or seat alone. For extra-comfortable seating you can have foam rubber cushioning.

FOLDS FLAT IN THREE EASY STEPS



Write: CLARIN MFG. CO., DEPT. 47, 4640 HARRISON ST.
Chicago 44, Illinois

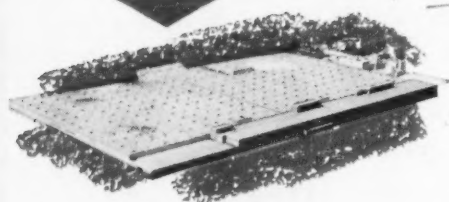
Clarín
ENGINEERED QUALITY

MAKES THE BIG DIFFERENCE IN FOLDING CHAIRS
(Circle 460 for more information)

Nearly 4 Miles of MILLS MOVABLE WALLS Provide

Space Control

at **UNITED AIRCRAFT**



Hamilton Standard Division,
United Aircraft Corporation,
Windsor Locks, Connecticut

Architects: Albert Kahn Associated
Architects & Engineers, Inc.

Builders: Turner Construction Co.

Write for complete information and literature on this modern efficient way to subdivide interior space, or see the Mills Catalog in Sweet's Architectural File.

THE ability to expand, contract or adapt production facilities quickly and efficiently is of primary importance in aircraft manufacturing today. As part of its program for preserving this essential flexibility United Aircraft makes extensive use of Mills Movable Walls in its offices and plants.

Mills Walls give United Aircraft *Space Control*—because they can be moved quickly, easily and at low cost. Changes can frequently be made overnight or during a week end.

Mills Walls combine efficient mobility with attractive appearance, structural stability and moderate cost. They are insulated and soundproofed, easily wired, and require only occasional washing to keep them looking fresh and new.

THE MILLS CO. 783 WAYSIDE ROAD, CLEVELAND 10, OHIO

MILLS *Movable* METAL WALLS

(Circle 480 for more information)

to the planning of laboratories. The ideas presented are the result of the combined experience of the leading companies concerned with the manufacture and distribution of scientific apparatus and laboratory equipment.

For a free copy, write to the Scientific Apparatus Makers Association, 20 North Wacker Drive, Chicago 6, Ill.; or circle number 558 on the Reader Service Card.

Fire salvage operations for your company fire department

A comprehensive, new booklet is available to companies with their own fire departments. It covers the care, maintenance, and handling of salvage covers, essential salvage equipment, and suggested specifications for salvage operations. The 62-page book is divided into twenty sections covering all types of work.

For a free copy of this book, write to The National Board of Fire Underwriters, 85 John Street, New York, N. Y.; or circle number 577 on the Reader Service Card.

Booklet prescribes for office electrical operation headaches

The symptoms and remedies for electrical failures in office and industry are detailed and illustrated in a new brochure. Specifying a prescription of survey, service, and maintenance as the cure for electrical headaches, this brochure is directed at saving management time and money. Among the problems considered are: Wiring, Lighting, Telecommunications, Safety Equipment, and Electronics.

The booklet takes a preventive approach by suggesting methods of avoiding electrical failures before they occur. It points out that common electrical troubles like short circuits, overloading, and mechanical injury can very often be prevented through proper planning.

For your free copy, write to B. Eichwald & Company, Inc., 237 East 39th Street, New York, N. Y.; or circle number 559 on the Reader Service Card.

Portable office humidifier controls moisture content

A new humidifying unit water-washes indoor winter air, removing dust and pollen. It has sufficient capacity for humidifying an area of about 1,000 square feet. It atomizes and discharges over 1½ pints of water vapor into the air each hour, quickly equalizing humidity, and can be

methods

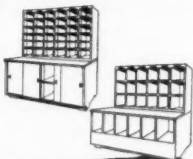
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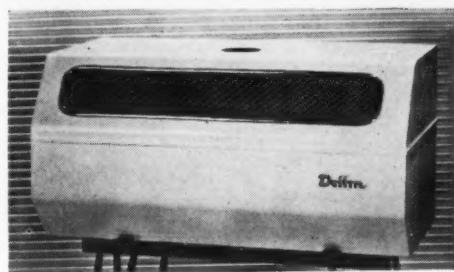
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operated in any desired location.

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Portable tape recorder operates from flashlight-type batteries

A new, portable tape recorder is de-
signed for extreme simplicity of operation
and high-fidelity reproduction. It has four
speeds and a battery-operated spring motor.
It measures 7" x 10" x 11" and weighs 15

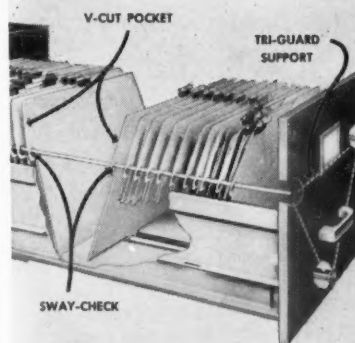


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change of speeds is possible and equaliza-
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Within
this innocent looking file
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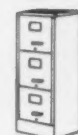
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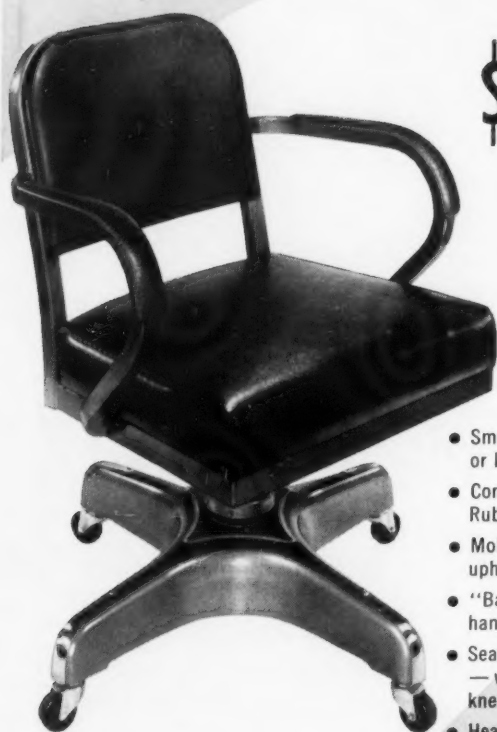
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STEEL CHAIRS

(Circle 475 for more information)

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A new device makes washing easy on windows up to 90 feet above the ground. Accidents due to strap or ladder failures can be prevented and maintenance costs can be reduced. With the use of sectional lightweight poles, an industrial water-



flow brush allows you to stand safely on the ground while washing those windows high in the air.

Poles come in five-foot sections and can easily be assembled for any desired

length. By inserting a pole into the expanded end of another pole and securing with two bolts and nuts, windows at various heights can be reached.

These brushes clean all wood, metal, glass, brick, and cement surfaces. They are designed so that they can be easily attached to a garden hose.

For more information, write to J. B. Sebrell Corporation, 300 S. Los Angeles Street, Los Angeles, Calif.; or circle number 552 on the Reader Service Card.

Milk machine vends various sizes and flavors

A new type milk dispenser solves the problem of serving three varieties of dairy drinks economically and safely. The refrigeration is sealed and defrosting is not required. Any brand of containers can be used and of either 1/2 pint, 1/3 quart or pint size. The flavors, as well as the size of the containers, can be changed as desired. Separate coin control for each flavor assures continued operation, even when one or two of the racks are sold out—a



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ALMA DESK CO., HIGH POINT, N.C.

(Circle 535 for more information)

features that omits relying on one control.

In operation, a coin is inserted, a lever is pressed, and the selection drops out instantly. There is a capacity of 120 to 156 containers (depending on the make), but should any of the racks be sold out between loadings, a red light so indicates, and an automatic sold-out mechanism returns coins. There is also a large reserve capacity. The machine is installed and serviced by a local milk company or vending machine operator.

For more information, write to Cedar Hill Farms, Inc., Cincinnati 27, O.; or circle number 572 on the Reader Service Card.

Cooling towers conserve water in air conditioning process

A new 15-ton capacity cooling tower gives the air conditioning and refrigeration contractor a wider selection of units to match the cooling system for a group of offices. Capacities vary from 3 to 15 tons.

The company has redesigned all the units to afford the user maximum efficiency with minimum space requirements. Several possible locations for air outlets increase the versatility of the units. Capable of conserving 95% of the water used when no

tower is installed, the units shortly pay for themselves in reduced water costs.

For more information, write to Acme Industries, Inc., Jackson, Mich.; or circle number 573 on the Reader Service Card.

New hand and face dryer eliminates heavy wiring

A new hot-air dryer utilizes the calrod heat transmission principle. This principle does away with old-type, electricity-consuming heating coils and provides instantaneous hot dry air, electronically.

The "electronic towel" can be plugged into any convenient socket as heavy wiring is not necessary. The elimination of heating coils also eliminates the danger of fire inherent in their use, due to dust accumulating around the coils themselves.

Hands and face can be dried simultaneously or individually; drying operations are controlled by convenient push-buttons.

Using less current than any coil operated dryer, the unit also keeps washrooms fresh and clean-smelling through a built-in, ultra-violet ozonating action.

For more information, write to the Electronic Towel Corporation, 342 Madison Avenue, New York, N. Y.; or circle number 574 on the Reader Service Card.

Vital News to Every Business...

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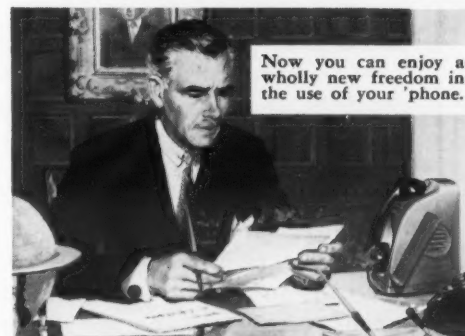
The Personal Communications Amplifier



BANKS, always looking out for their depositors' interests, are quick to adopt new ways of increasing efficiency and cutting down overhead. That's why so many are using FONADEK, the amazing new electronic instrument that holds the phone while you talk. Here's how a well-known bank, in an actual survey, saved five minutes a call with FONADEK:*

DATE	NO. OF CALLS	TIME SAVED
5-21-54	2	9 minutes
5-24-54	5	30 minutes
5-25-54	11	60 minutes
5-26-54	12	43 minutes
5-27-54	7	29 minutes
5-28-54	5	32 minutes
Total minutes saved		203 minutes

*Actual letter on file.



A FEW OF THE MANY FIRMS NOW USING FONADEK:

American Car & Foundry	Ryan Aeronautical Company
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FONADEK will save valuable time for you... give you freedom never before thought possible in the use of the telephone. This up-to-the-minute business aid eliminates wasteful hanging on, frees your hands to take notes or consult records, permits executive groups to "sit in" on calls—hold telephone conferences. FONADEK cuts travel time and costs. Already thousands of American business organizations are enjoying this instrument—hailed as one of the most important inventions in communications since the telephone.

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SCHEDULE-A-DATE Saves TIME and AVOIDS ERRORS by converting indefinite periods of time to definite dates as quickly as looking at your watch.

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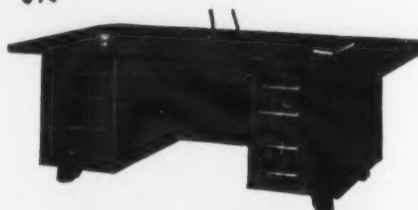
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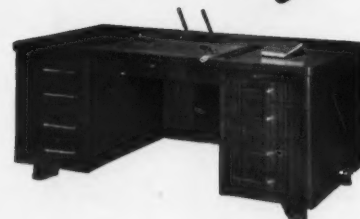
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(Circle 509 for more information)

How and when we use Market research

by **Harold E. Smith**, Director of Market Research
Thomas A. Edison, Inc., West Orange, N. J.

The lack of adequate market research on a single new product recently cost a certain well-known company over \$100,000. I like to mention this in explaining that we believe our market research activities preclude such a possibility from happening here. Designed to make management's job easier and simpler we consider market research as an advisory function that aids and supplements executive judgment. The area within which decisions have to be based on previous experience or intuition is thereby reduced.

As general practice in our Instrument Division, a screening committee meets at regular intervals for discussion of new business and product possibilities. A proposed new product is turned over to company engineers for an informal evaluation to see if it meets with their technical approval. Approved products must then wait until such time as market research can factually answer the question of whether or not we should undertake the manufacture and sale of this product.

How our research works

For example, an inventor who had developed a unique type of industrial control equipment recently approached us. For certain reasons, having nothing to do with the product, he wanted us to take over the manufacture and marketing of his instrument. Product-wise, this control and measuring device was most convenient. It saved an appreciable amount of an engineer's time, by providing a finished permanent record on physical variables over a period of time, without the necessity of time-consuming plotting and analyses. At first glance, the market and prospective use

for a product such as this seemed to be extremely worth-while. Potentially, it could be used in any power plant, refinery, catalytic plant, or process industry, wherever a number of variables or factors had to be measured and recorded. The expected cost of the instrument was high, but not in relation to its utility or the man hours saved.

As soon as our engineers had evaluated it from a technical standpoint, we started a market investigation to determine its potential sales volume. Consultations concerning it were held with plant design engineers, instrumentation engineers of the public utilities that might use this instrument, and operating personnel of other industries conceivably constituting a market.

First contacts were encouraging. Engineers welcomed a device which would eliminate the necessity of spending long hours in obtaining and plotting the records they must have. However, further questioning showed that they would be reluctant to replace existing equipment with this device, because of the estimated cost and installation charges for the new equipment. We then could safely assume the existing market to be largely limited to new plants in the process of being constructed or in the planning stage. Naturally, this pulled the over-all potential down to a much smaller quantity. We went next to the design engineers who were busy with plans for new plants of the type which might use the product in question. Here again, the design engineers displayed a great interest in the technical aspects of the product but, upon further questioning, knew of no specific plant where the product could be used to sufficient ad-

"In my opinion market research goes hand in hand with product research. There's not much point in having your laboratory engage in research for the creation or development of new products unless you

ITS PLACE AND FUNCTION

have reliable information that there is a worth-while market for those products." **HENRY G. RITER**, 3rd, President, Thomas A. Edison, Inc.

vantage to justify its inclusion. Thus, the over-all market potential was still further reduced.

At this point, further field investigation became unnecessary. The remaining market was appraised as too small for justification of the corporate investment necessary in additional development, tooling costs, etc., to make the proposed product. Also, it was obvious from our research findings that the sales problem would be a difficult one. In fact, a missionary type of job was called for before any increase in the market could be expected. Our findings also brought to light the possibility of the equipment requiring service, which would represent an additional cost to the company.

When to improve a product

Still another function of our market research is to provide the answers on how best to adapt an existing product or system to changing market needs or to a bigger potential market. For years, we had been making a specialized type of industrial control equipment which had become dated. It was bulky, it had servicing handicaps, and had not been modified or improved in many years. Its acceptance was becoming limited. That same screening committee we spoke of earlier made another request to our department. Specifically, they wanted to know whether or not it was worth-while to continue manufacturing and marketing this control equipment.

Perhaps, before I go any further, it might be a good idea for me to describe the functions of this equipment. It was originally designed to check intermittently critical temperatures at a number of points in an industrial ap-

methods

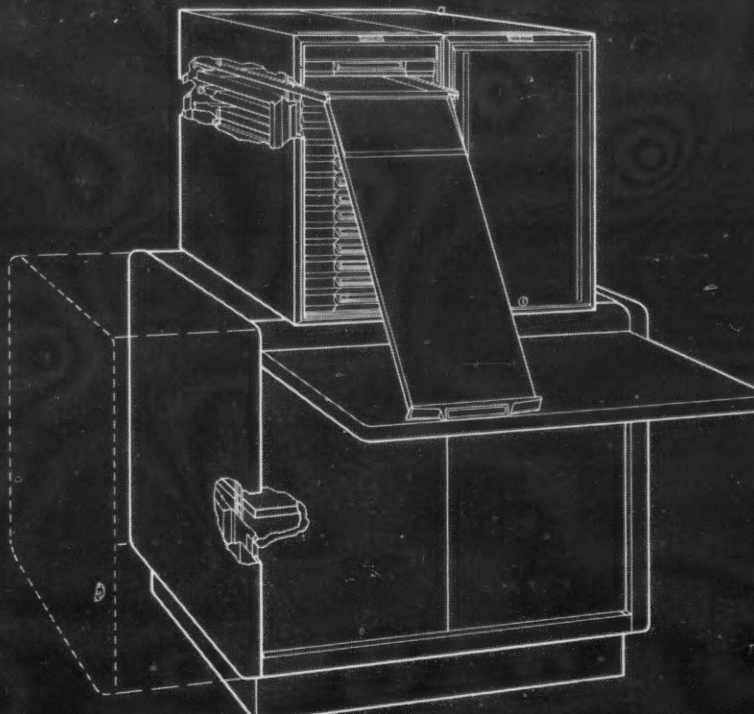
plication and to automatically alarm if any of these temperatures were exceeded. One of the uses to which this system was put was the monitoring of bearings in high speed equipment. Occasionally such bearings might become overheated through lack of proper lubrication or for other reasons, and the alarm provided by our equipment would enable the operator to take remedial steps or to stop the fan or machine before any extensive damage occurred. Similar uses for this equipment were found in parts of the process industries, where deviation from correct temperature could result in spoiling large quantities of materials.

The first order of business in that assignment also was to talk with consulting and instrumentation engineers in various plants. After a number of exploratory interviews we were certain that there existed a fairly substantial need for such equipment. Confident that there was an appreciable market for such a system, we set about determining exactly what features would make such a system most useful to prospective customers. We again got together with these same engineers and with our own distributors, who render a real advisory service to their customers, in order to discover just what physical qualities and operating features were most wanted. In analyzing our findings we saw that the number one requirement was for a system that would provide continuous rather than intermittent protection of all points covered. Our old equipment, for the record, was set up to check each point being monitored every 2½ minutes. We found there was a great demand for reduced size of the panel area of the units, for lower installation costs, and for greater flexibility in the product itself, thereby making it suitable for use by those with only a few points to be checked, i.e., a smaller installation. Also we found there was an additional market possibility for equipment designed to perform these functions with original equipment manufacturers.

Having satisfied ourselves regarding the existence of a substantial market and, through painstaking investigation, having arrived at the features that would increase the utility of the product and expand its application, we pro-

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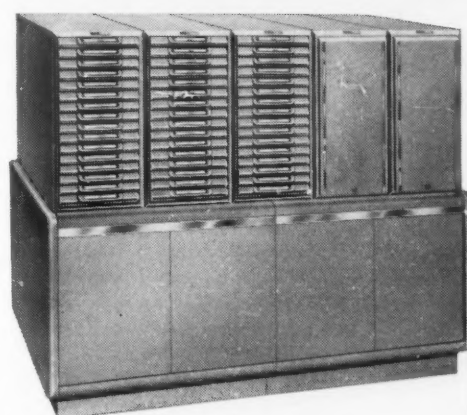
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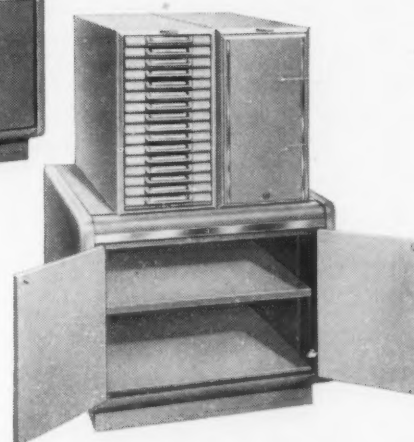
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****For prompt attention, address inquiries to Dept. M, Addo Machine Co., Inc., 145 W. 57th St., New York 19, N. Y.**

(Circle 450 for more information)

ceeded to engineer a working model of this new system for industrial control measurement and detection. Such a system has recently come on the market with the trade name of *Omniguard*.

Still another case

Our Medical Gas Division learned of a product used extensively for some past years in the British Isles (currently being produced by one domestic company) and wanted us to determine if there was sufficient market potential for this product to justify its addition to their line of anesthetic gases and equipment. Primarily used as a degreasing agent in its unpurified form, the product (Trichlorethylene) has analgesic and anesthetic properties.

In England, it has been used extensively in obstetrics and minor surgery for many years. It is known to have remarkable pain-relieving qualities, to be pleasant to take and to have several other advantages. The Medical Gas Division, which presently manufactures gases for hospital and commercial uses, thought such a product might fit in very well with their present selling and distributive organization. Underlining our firm belief that a company is best served by a correlation of market with physical research, our central research laboratory was first asked to determine if high-purity Trichlorethylene could be produced economically at the Medical Gas Division. This was done and the opinion was affirmative. Our specific concern then was to determine the present and future market for such a product and the extent and severity of existing competition.

Our staff then began a series of interviews with leading anesthesiologists, doctors, dentists, and general practitioners, being those individuals whose opinions would be most valid. Our investigation revealed that the use of Trichlorethylene in the United States undoubtedly would increase, since it had many advantages for relief of pain in minor surgery and for obstetrical use and that it also would be useful in combination with other agents, in general anesthesia for major surgery.

Again, planned market research indicated adequate room for our company to profitably produce and sell the product studied. *m/m*

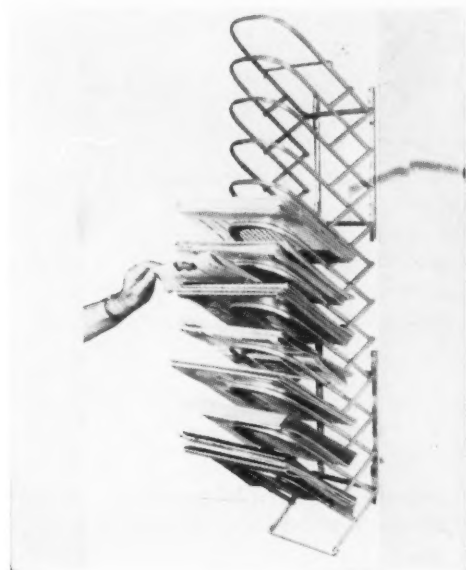
methods

clippings

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New rack frees desk space by using wasted wall area

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for either temporary or permanent housing. Labeling can be put on top of the shelves with pen, pencil, or stickers. The rack comes in two sizes: 6 or 12 sections.

The mail room can use it to assemble papers and mail for inter-office or incoming and outgoing routing. In any office it can be used to hold catalogs or other reference matter which employees consult, leaving more desk space for other work. For direct mailings, it makes a convenient housing rack to accommodate bulletins.

For more information, write to the Evans Specialty Company, Inc., 407 N. Munford Street, Richmond, Va.; or circle number 557 on the Reader Service Card.



Alphabetic interpreter translates punched cards into printed data

A new alphabetic interpreter translates punched card holes into printed data on any of 25 lines of the card. This makes it possible to use the card as a printed source document or a final accounting document. The machine interprets 100 cards a minute. It can print up to 60 characters on a single line. In each of



these 60 printing positions, it can print any of 26 alphabetic characters, 10 digits or 11 special characters.

Major features of the interpreter include a control that permits printing only on selected cards of a group being processed and a device which checks the accuracy of printing during interpreting and stops printing when an error is indicated. Other features allow information to be read from a master card and printed on following detail cards and provides for asterisk protection of up to 8 position amounts on punched card checks.

For more information, write to International Business Machine Corporation, 590 Madison Avenue, New York 22, N. Y.; or circle number 569 on the Reader Service Card.



Rotary desk-type file utilizes present records

A new rotary file is designed to simplify and speed up active record handling. There is no need to alter your present records, merely place them as they are in the file. The files are outfitted with sturdy 10" trays that are easily removable. There is always up to 37% of the entire contents in view and accessible to the operator.

Files operate by push button and foot pedal control and are equipped with a special clutch device enabling easy manual operation in the event of power failure. Files make one revolution in nine seconds and revolve clockwise or counter clockwise. Working trays come flush with the posting shelf work area, placing the records at the file clerk's finger tips with

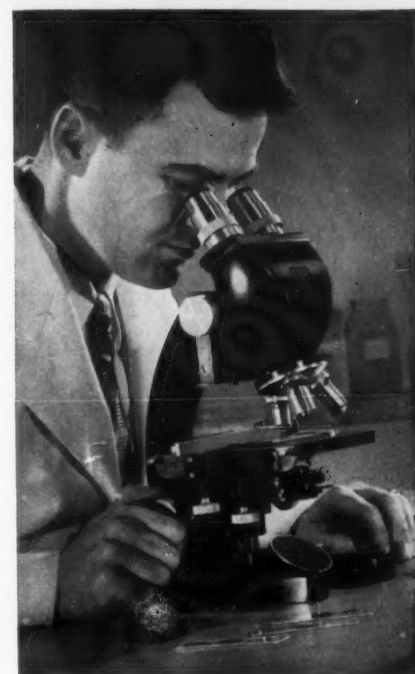
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out the necessity of arm lifting for each reference.

For more information, write to Ferris Business Equipment, Inc., 244 Great Meadows Road, Stratford, Conn.; or circle number 551 on the Reader Service Card.



Information kit available on stencil application shipping systems

A new complete shipping systems information kit has been prepared to give the busy executive all the important information he needs to solve a marking or labeling problem in his business. It contains separate folders devoted to the following important developments made in the shipping field.

1. How to use a new tab-on stencil to prepare shipments.
2. How to use "direct to container" marking system to make out facsimile labels and print addresses right on cartons.
3. How to print labels and fill in addresses or other variable information in one fast operation.

In addition, this kit also contains sample stencils and other data.

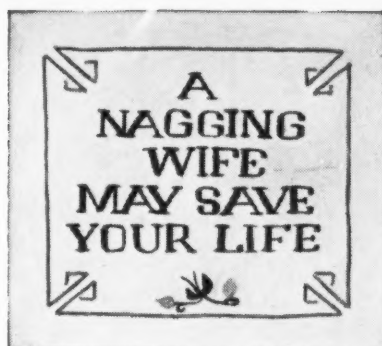
For a free kit, write to Weber Label & Marking Systems, 200 West Central Road, Mt. Prospect, Ill.; or circle number 553 on the Reader Service Card.



Telephone directory, catalog, and ready-reference systematizer

A new cabinet integrates all telephone procedures, catalogs, credits, and inventory or forms procedures where fast fact finding is a must. The unit is made in various binder sections to meet all needs

methods

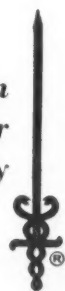


IF YOU ARE OVER 45 and your wife keeps insisting that you should have two chest x-rays every year... don't blame her. *Thank her!* Semi-annual chest x-rays are the best "insurance" you can have against death from lung cancer.

The cold fact is that lung cancer has increased so alarmingly that today you are six times more likely to develop lung cancer than a man of your age 20 years ago. Our doctors know that their chances of saving your life could be as much as ten times greater if they could only detect lung cancer before it "talks"... before you notice any symptom in yourself. That's why we urge you to make semi-annual chest x-rays a habit—for life.

To see our new life-saving film "The Warning Shadow" call the American Cancer Society office nearest you or simply write to "Cancer" in care of your local Post Office.

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Cancer
Society



and is available in desk, wall, and standard and modern desk models.

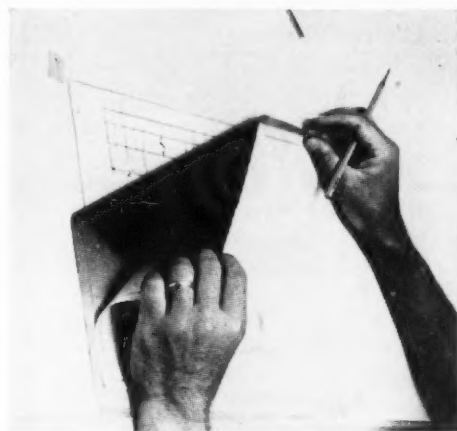
For more information, write to The Steelmasters, 170 West 233rd Street, New York, N. Y.; or circle number 560 on the Reader Service Card.



New tracing carbon for preparing master whiteprint drawings

Greater opacity for engineering drawings on vellum, necessary for quality reproductions when using the whiteprinting processes, is now made possible by use of a full-coated, single-use, yellow/black tracing carbon.

The tracing carbon, coated yellow on one side and black on the other, is placed yellow side up, between the original and



the copy paper. One tracing operation produces a drawing with perfect opacity and a duplicate copy is made in black for filing purposes.

For more information, write to Columbia Ribbon & Carbon Mfg. Co., Inc., Herb Hill Road, Glen Cove, N. Y.; or circle number 555 on the Reader Service Card.



Magnetic tape splicer uses new type splice

A combination cutter-splicer for magnetic recording tape cuts two rounded indentations in the tape splice leaving the edges of the tape, which contact parts of the recorder, entirely free of adhesive.

To operate the splicer, the cuts (or broken ends of the tape) are simply inserted in the tape guides of the machine in overlapping position. The lever is depressed, cutting a neat and accurate miter butt in the overlapped ends. Splicing tape is applied to the joint and the arm de-

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forget
to do
these things
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To send a letter costs \$0.92* but...
...how much to receive one?



Throw it away and it costs you nothing. But keep it...and it probably costs more than you first realize to route it to department heads, the Sales Manager, or to file. That is, if you route it by time-wasting, out-dated methods like messengers.

For example, assume that you handle a daily average of 4000 pieces of incoming and intra-plant mail, and that average delivery time for each is 12 minutes. That's a daily total of 800 piece-hours during which your paper work is bogged down in the delivery process, beyond the reach of those who need it to work on...net result: too much waste time, too-high functional cost. Therefore, reduction of the time paperwork is in transit increases your operational efficiency; personnel hours saved by modern methods of paper handling cuts your functional costs. Both of these advantages are available to you in one of the Lamson Systems for Mechanized Paper Handling, whichever best suits the needs of your organization.

A Lamson Selective Vertical Conveyor System achieves maximum efficiency in floor-to-floor vertical distribution of paperwork in volume. The deep, roomy trays safely handle a pay load of 30 pounds and are automatically discharged at the desired floor. One of the users listed below distributes more than 1,000,000 pieces of mail monthly among the 33 floors of his system.

A Lamson Airtube System means greatest economy of operation in inter-floor, point-to-point transfer of mail, punch cards, work sheets, laboratory samples, blueprints, even whole file folders and their contents. Travelling at speeds up to 30 feet per second. Airtubes get the work where it is needed, when it is needed, at low cost.

These Lamson Systems for efficient, Mechanized Paper Handling are profitably used by each of the organizations listed below. Why not investigate what the right one can do for you?

* Management Methods
February 1953

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...and many more

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Gentlemen:
Please mail me, without obligation, the illustrated case-history brochures, "Airtube on Target" and "Selective Vertical Conveyors." My requirements for mechanized paper handling would probably call primarily for
☐ vertical transfer ☐ horizontal transfer ☐ a combination

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

(Circle 513 for more information)



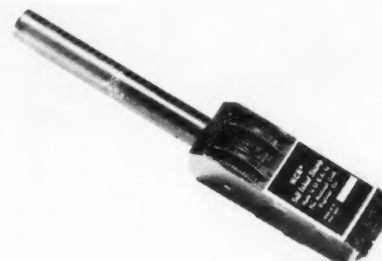
pressed in the "trim" position. This trims the splicing tape and the recording tape to the exact indented width.

For more information, write to the Yale Industries Corporation, 82-09 251st Street, Bellerose 26, N. Y.; or circle number 576 on the Reader Service Card.



Self-inking rubber stamp stores reservoir of ink

A new line of self-inked, porous rubber hand stamps will make 400 to 500 or more clear impressions for each inking. The conventional "multiple" stamp has a mechanism which turns the printing sectors, and squeezes them against a stamp pad each time an impression is made. The new stamp, instead, utilizes an exclusive



"porous rubber" which simply absorbs enough ink to make hundreds of impressions without re-inking. The impressions can be made as fast as the hand can move, without injury to the stamp. A variety of widths and types of figures is available.

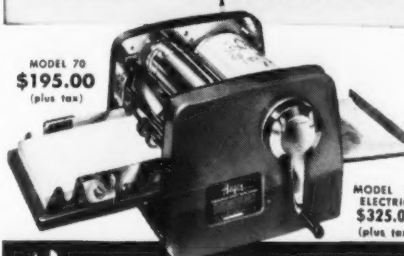
For more information, write to The National Cash Register Company, Main and K Streets, Dayton, O.; or circle number 562 on the Reader Service Card.



New "upside-down" stencil aids positioning in machine

A new type of stencil has been specially designed for use with a vari-typer. The front-feed arrangement of this type machine, as opposed to the round-the-

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(Circle 527 for more information)

october 1954

platen feed of the ordinary typewriter, presented a slight awkwardness in positioning the stencil. The new arrangement permits the stencil to be positioned "head-first" since the guide line markings are all imprinted upside down. There is infinitely greater convenience and accuracy by this method which, in no way, changes the final running operation.

For more information, write to the Gestetner Corporation, 50 McLean Avenue, Yonkers, N. Y.; or circle number 571 on the Reader Service Card.

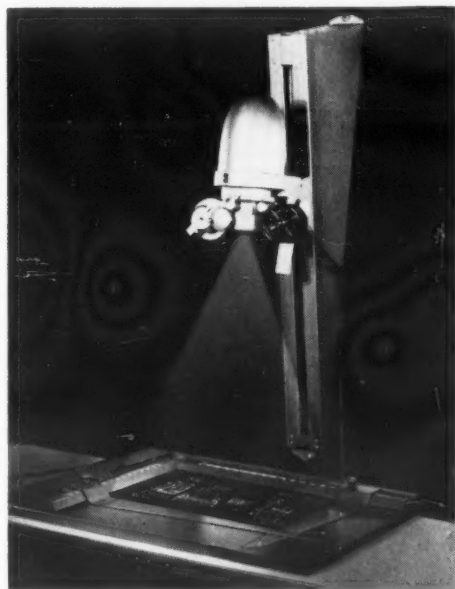


New 16mm-35mm microfilm enlarger features improved light source

A new enlarger for 16mm and 35mm microfilm offers a brilliant and concentrated light source and a completely redesigned optical system. The "point" light source and the high resolution lens project fine detail with increased sharpness and legibility, at magnifications ranging from 4 to 45 diameters.

The "point" light from the 6-volt, 5-ampere, coiled filament lamp, also makes printing several times faster than in earlier models. Voltage can be increased slightly for visual focusing and for magnifications over 20 diameters. Other advantages of the new light system are reduced power consumption and cooler operation. The enlarger features remote film transport and focus control, plus greater ease of operation since the new enlarger permits film reels to be put on from the front.

A glassless film carrier prevents film scratches and is easy to keep clean. There is no need for a measuring tape since



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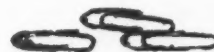
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NAME.....
COMPANY.....
ADDRESS.....
CITY.....ZONE....STATE.....

(Circle 524 for more information)

the image is focused visually on the copy board. The enlarger can be mounted on a wall or on a table where horizontal projection is desired.

For more information write to Eastman Kodak Company, Rochester 4, N. Y.; or circle number 567 on the Reader Service Card.



Teletype tape and tabulating cards used to make plates

With a new machine, it is now possible to make self-writing master record addressing plates, automatically, from a

standard teletype tape, or a tape produced from tabulating cards on an electric typewriter, or a tape produced by a teletype perforator.

Names, descriptions, figures, and other repetitive data can now be transmitted from distant points to a central office, or vice versa, over telegraph wires, and a tape is prepared as a by-product. This five-hole code tape can then be used to make addressing plates automatically, without an operator and without intervening re-writing or other machine operations. Information, not pertinent to a permanent record for re-writing purposes, can be automatically deleted.

This enables any business to wire-transmit information from one area to an-

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oh man!



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wonderful!

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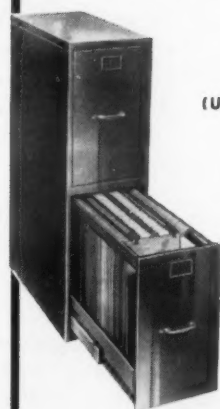
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(Circle 525 for more information)

other and produce the necessary plates as a by-product of a single writing from the source document.

For more information, write to the Addressograph-Multigraph Corporation, 1200 Babbitt Road, Cleveland, O.; or circle number 561 on the Reader Service Card.

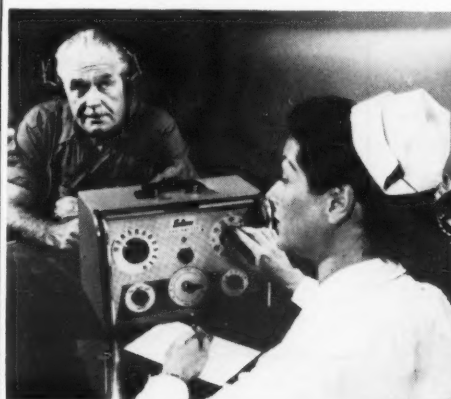


New audiometer for industrial hearing tests

A new audiometer is designed to provide reliable and simplified hearing tests by industrial firms.

Some of the special features claimed, which will make it more economical and easier to compile an accurate record of employees' hearing ability, include:

1. The instruments can test individuals or groups up to 40 persons.
2. It has 75% fewer component parts than most similar instruments assuring more reliable performance, easier maintenance and operation. It uses only one tube and one voltage regulator where previously three to 11 tubes were used.
3. It has a more compact circuit, enabling a more stable calibration.



4. It weighs less than 11 pounds and can be easily carried from plant to plant or to different departments.

5. For group testing, it enables reading the hearing loss directly on the dial.

6. It eliminates distracting clicking sounds when the hearing loss dial is turned.

7. The masking tone is calibrated, enabling a more accurate measurement for individual tests. (Masking tone is a noise deliberately produced to enter the untested ear while the other ear is being tested.)

For more information, write to the Belltone Hearing Aid Company, 2900 W. 36th Street, Chicago, Ill.; or circle number 578 on the Reader Service Card.

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- One Sprayhead replaces 4 faucets, has no moving parts, — provides tempered water supply for 2 persons with perfect sanitation.
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1177

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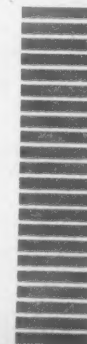
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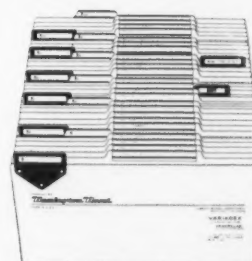
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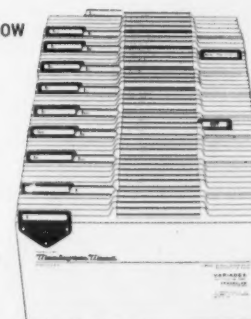
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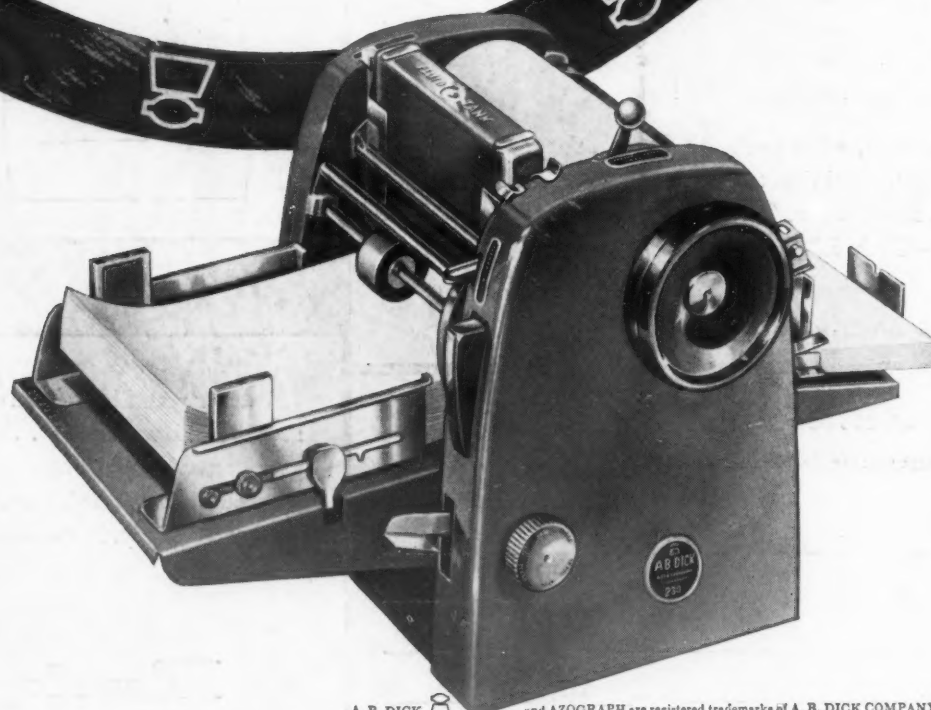
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
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